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Service Manual

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PHILIPS

1. Technical Specifications, Connections, and Chassis Overview

Index of this chapter:

1.1 Technical Specifications
1.2 Connection Overview
1.3 Chassis Overview

Notes:

- Figures can deviate due to the different set executions.
- Specifications are indicative (subject to change).

1.1 Technical Specifications

1.1.1 Vision

Display type	:	LCD
Screen size	:	26" (66 cm), 16:9
	:	32" (81 cm), 16:9
	:	37" (94 cm), 16:9
	:	42" (107 cm), 16:9
	:	52" (132 cm), 16:9
Resolution (H × V pixels)	:	1366 × 768
	:	1920 × 1080 (42PFL5432, 52PFL5432)
Min. contrast ratio	:	3500:1 (26")
	:	4000:1 (32")
	:	5000:1 (37 and 42")
	:	4000:1 (42PFL5432)
	:	7500:1 (52PFL5432)
Min. light output (cd/m^2)	:	500
Typ. response time (ms)	:	8
Viewing angle (H × V degrees)	:	178 × 178 (32 and 42")
	:	170 × 170 (37PFL5322, 42PFL5432, 52PFL5432)
Tuning system	:	PLL
TV Color systems	:	PAL M/N
	:	NTSC
Video playback	:	PAL
	:	NTSC
Supported computer formats	:	1024 × 768 @ 60, 70, 75, 85 Hz
	:	640 × 480 @ 60, 72, 75, 85 Hz
	:	720 × 400 @ 70 Hz
Supported video formats	:	640 × 480i - 1fH
	:	720 × 576i - 1fH
	:	640 × 480p - 2fH
	:	720 × 576p - 2fH
	:	1920 × 1080p - 3fH
	:	1280 × 720p - 3fH
Presets/channels	:	125 presets
Tuner bands	:	VHF
	:	UHF
	:	S-band
	:	Hyper-band

1.1.2 Sound

Sound systems	:	SAP
Equalizer	:	7-bands
Maximum power (W_{RMS})	:	2 × 10
Sound enhancement	:	Auto Volume Leveller
	:	Incredible Surround

1.1.3 Miscellaneous

Power supply:

- Mains voltage (V_{AC})	:	100 - 240
- Mains frequency (Hz)	:	50 / 60

Ambient conditions:

- Temperature range (°C)	:	+5 to +40
- Maximum humidity	:	90% R.H.

Power consumption (values are indicative)

- Normal operation (W)	:	≈ 120 (26")
	:	≈ 150 (32")
	:	≈ 175 (37")
	:	≈ 240 (42")
	:	≈ 340 (52")
- Stand-by (W)	:	< 1

Dimensions (W × H × D mm)	:	682 × 473 × 114 (26")
	:	805 × 547 × 116 (32")
	:	935 × 626 × 116 (37")
	:	1046 × 669 × 116(42")
	:	1289 × 835 × 124(52")
Weight (kg)	:	12.0 (26")
	:	14.2 (32")
	:	23.0 (37")
	:	33.5 (42")
	:	40.0 (52")

1.2 Connection Overview

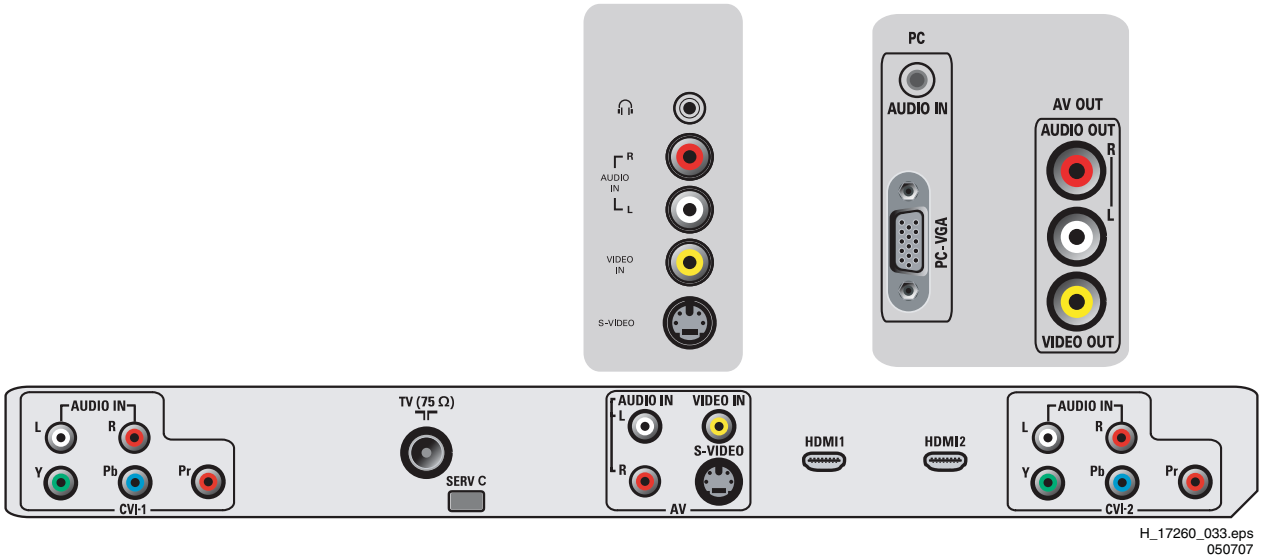

Figure 1-1 Side and rear I/O connections

Note: The following connector color abbreviations are used (acc. to DIN/IEC 757): Bk= Black, Bu= Blue, Gn= Green, Gy= Grey, Rd= Red, Wh= White, and Ye= Yellow.

1.2.1 Side Connections

Headphone - Out

Bk - Headphone	32 - 600 ohm / 10 mW	

Cinch: Video CVBS - In, Audio - In

Rd - Audio R	0.5 V_{RMS} / 10 kohm	
Wh - Audio L	0.5 V_{RMS} / 10 kohm	
Ye - Video CVBS	1 V_{PP} / 75 ohm	

S-Video (Hosiden): Video Y/C - In

1 - Ground Y	Gnd	
2 - Ground C	Gnd	
3 - Video Y	1 V_{PP} / 75 ohm	
4 - Video C	0.3 V_{PP}P / 75 ohm	

1.2.2 Rear Connections

CVI-1: Cinch: Video YPbPr - In, Audio - In

Gn - Video Y	1 V_{PP} / 75 ohm	
Bu - Video Pb	0.7 V_{PP} / 75 ohm	
Rd - Video Pr	0.7 V_{PP} / 75 ohm	
Wh - Audio L	0.5 V_{RMS} / 10 kohm	
Rd - Audio R	0.5 V_{RMS} / 10 kohm	

Aerial - In

- F-type (US)	Coax, 75 ohm	

Service Connector (ComPair)

1 - SDA-S	I^2C Data (0 - 5 V)	
2 - SCL-S	I^2C Clock (0 - 5 V)	
3 - Ground	Gnd	

AV: Cinch: Video CVBS - In, Audio - In

Ye - Video CVBS	1 V_{PP} / 75 ohm	
Wh - Audio L	0.5 V_{RMS} / 10 kohm	
Rd - Audio R	0.5 V_{RMS} / 10 kohm	

AV: S-Video (Hosiden): Video Y/C - In

1 - Ground Y	Gnd	
2 - Ground C	Gnd	
3 - Video Y	1 V_{PP} / 75 ohm	
4 - Video C	0.3 V_{PP}P / 75 ohm	

HDMI 1 & 2: Digital Video, Digital Audio - In

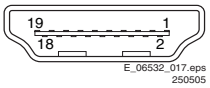

Figure 1-2 HDMI (type A) connector

1 - D2+	Data channel	
2 - Shield	Gnd	
3 - D2-	Data channel	
4 - D1+	Data channel	
5 - Shield	Gnd	
6 - D1-	Data channel	
7 - D0+	Data channel	
8 - Shield	Gnd	
9 - D0-	Data channel	
10 - CLK+	Data channel	
11 - Shield	Gnd	
12 - CLK-	Data channel	
13 - n.c.		
14 - n.c.		
15 - DDC_SCL	DDC clock	
16 - DDC_SDA	DDC data	
17 - Ground	Gnd	
18 - +5V		
19 - HPD	Hot Plug Detect	
20 - Ground	Gnd	

CVI-2: Cinch: Video YPbPr - In, Audio - In

Gn - Video Y	1 V_{PP} / 75 ohm	
Bu - Video Pb	0.7 V_{PP} / 75 ohm	
Rd - Video Pr	0.7 V_{PP} / 75 ohm	
Wh - Audio L	0.5 V_{RMS} / 10 kohm	
Rd - Audio R	0.5 V_{RMS} / 10 kohm	

PC - VGA: Video 2fH RGB/YPbPr - In

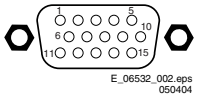

Figure 1-3 VGA Connector

1	- Video Red/Pr	0.7 V_{PP} / 75 ohm	⊕
2	- Video Green/Y	0.7 V_{PP} / 75 ohm	⊕
3	- Video Blue/Pb	0.7 V_{PP} / 75 ohm	⊕
4	- n.c.		
5	- Ground	Gnd	⏚
6	- Ground Red	Gnd	⏚
7	- Ground Green	Gnd	⏚
8	- Ground Blue	Gnd	⏚
9	- +5V_{DC}	+5 V	⊕
10	- Ground Sync	Gnd	⏚
11	- n.c.		
12	- DDC_SDA	DDC data	⊕
13	- H-sync	0 - 5 V	⊕
14	- V-sync	0 - 5 V	⊕
15	- DDC_SCL	DDC clock	⊕

PC - Mini Jack: Audio - In

Bk	- Audio R + L	0.5 V_{RMS} / 10 kohm	3.5mm ⊕

AV Out - Cinch: Video CVBS - Out, Audio - Out

Rd	- Audio R	0.5 V_{RMS} / 10 kohm	⊖ ◎
Wh	- Audio L	0.5 V_{RMS} /10 kohm	⊖ ◎
Ye	- Video CVBS	1 V_{PP} / 75 ohm	⊖ ◎

1.3 Chassis Overview

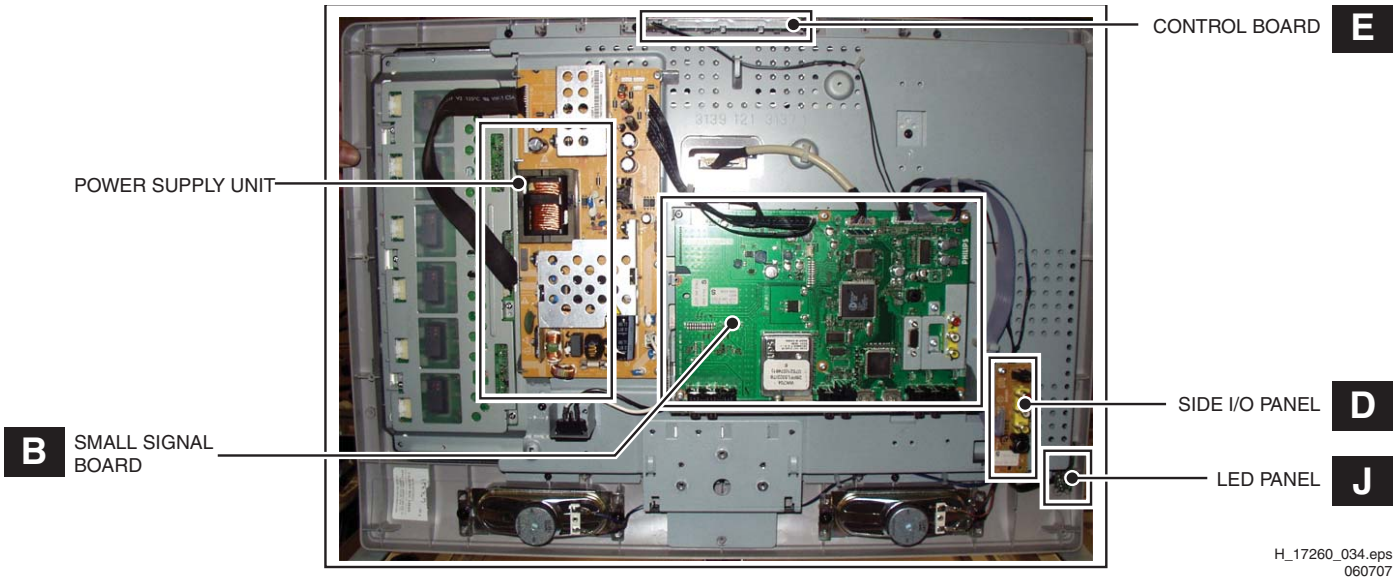

Figure 1-4 PWB/CBA locations (26" models, ME5P styling)

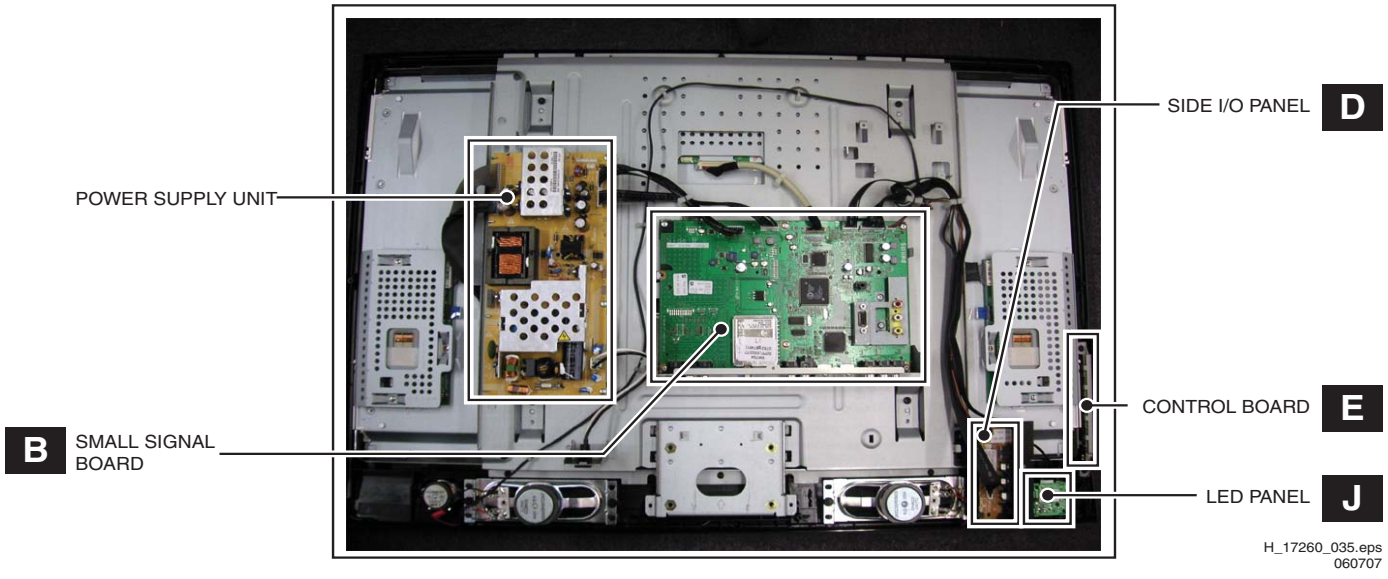

Figure 1-5 PWB/CBA locations (32" models, ME7 styling)

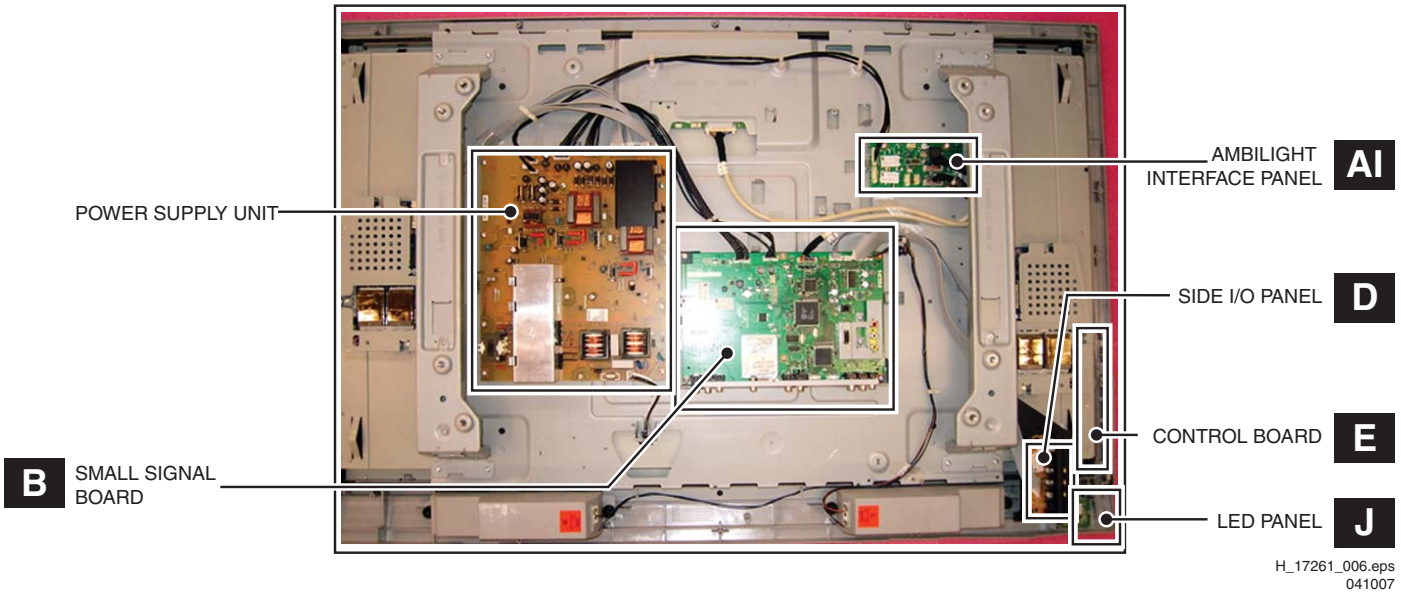

Figure 1-6 PWB/CBA locations (37” and 42” models without 1080p module, ME7 styling)

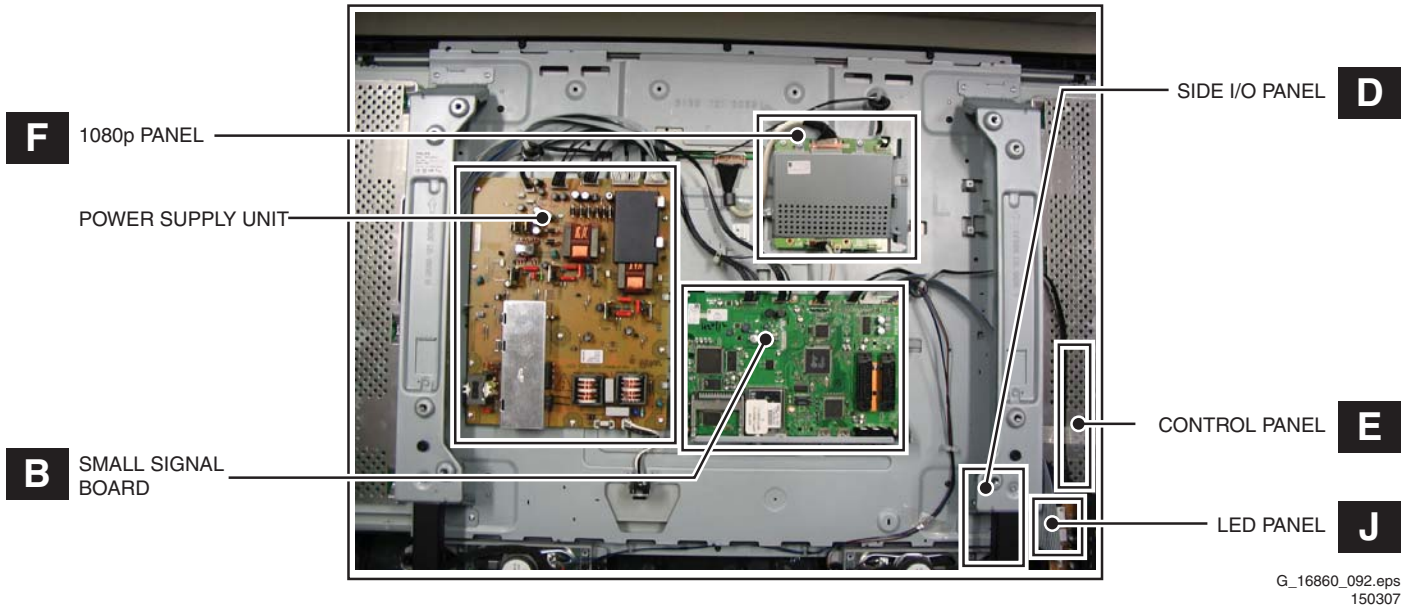

Figure 1-7 PWB/CBA locations (42” models with 1080p module, ME7 styling)

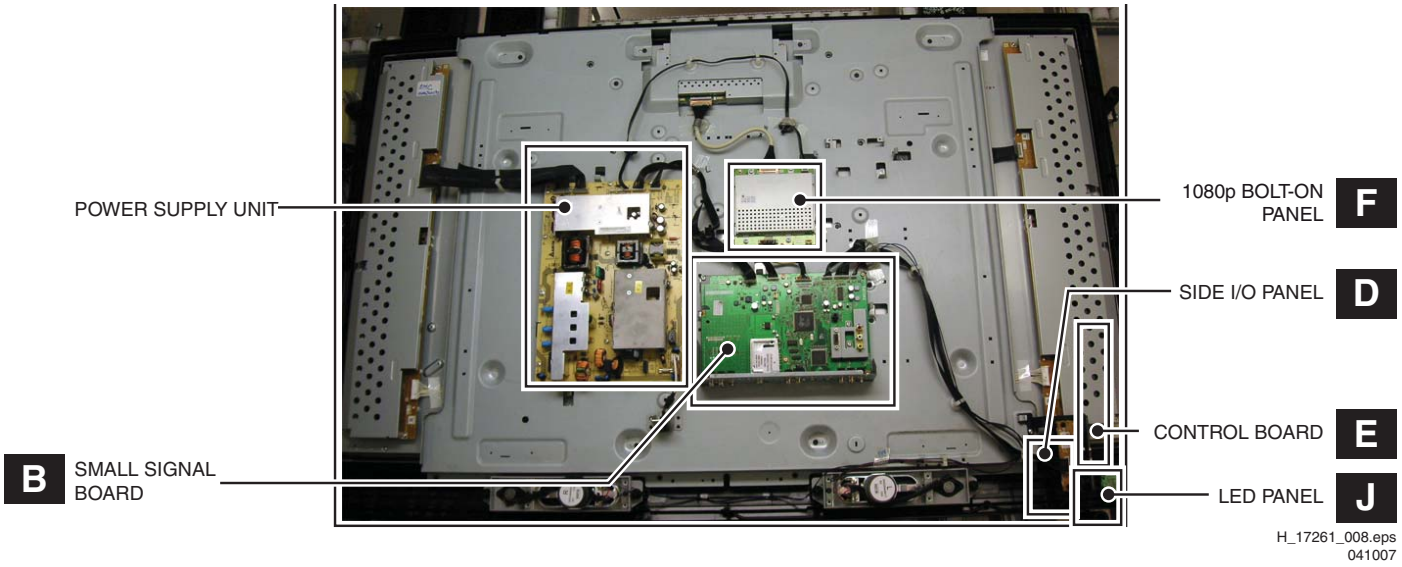

Figure 1-8 PWB/CBA locations (52" models, ME7 styling)

2. Safety Instructions, Warnings, and Notes

Index of this chapter:

2.1 Safety Instructions
2.2 Warnings
2.3 Notes

2.1 Safety Instructions

Safety regulations require the following **during** a repair:

- Connect the set to the Mains/AC Power via an isolation transformer (> 800 VA).
- Replace safety components, indicated by the symbol ⚠, only by components identical to the original ones. Any other component substitution (other than original type) may increase risk of fire or electrical shock hazard.

Safety regulations require that **after** a repair, the set must be returned in its original condition. Pay in particular attention to the following points:

- Route the wire trees correctly and fix them with the mounted cable clamps.
- Check the insulation of the Mains/AC Power lead for external damage.
- Check the strain relief of the Mains/AC Power cord for proper function.
- Check the electrical DC resistance between the Mains/AC Power plug and the secondary side (only for sets that have a Mains/AC Power isolated power supply):
  1. Unplug the Mains/AC Power cord and connect a wire between the two pins of the Mains/AC Power plug.
  2. Set the Mains/AC Power switch to the “on” position (keep the Mains/AC Power cord unplugged!).
  3. Measure the resistance value between the pins of the Mains/AC Power plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be between 4.5 Mohm and 12 Mohm.
  4. Switch “off” the set, and remove the wire between the two pins of the Mains/AC Power plug.
- Check the cabinet for defects, to prevent touching of any inner parts by the customer.

2.2 Warnings

- All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. Make sure that, during repair, you are connected with the same potential as the mass of the set by a wristband with resistance. Keep components and tools also at this same potential. Available ESD protection equipment:
  – Complete kit ESD3 (small tablemat, wristband, connection box, extension cable and earth cable) 4822 310 10671.
  – Wristband tester 4822 344 13999.
- Be careful during measurements in the high voltage section.
- Never replace modules or other components while the unit is switched “on”.
- When you align the set, use plastic rather than metal tools. This will prevent any short circuits and the danger of a circuit becoming unstable.

2.3 Notes

2.3.1 General

- Measure the voltages and waveforms with regard to the chassis (= tuner) ground (⏚), or hot ground (⏚), depending on the tested area of circuitry. The voltages and waveforms shown in the diagrams are indicative. Measure them in the Service Default Mode (see chapter 5) with a color bar signal and stereo sound (L: 3 kHz, R: 1 kHz unless stated otherwise) and picture carrier at 475.25 MHz for PAL, or 61.25 MHz for NTSC (channel 3).
- Where necessary, measure the waveforms and voltages with (⊓) and without (⊼) aerial signal. Measure the voltages in the power supply section both in normal operation (⏻) and in stand-by (⏻). These values are indicated by means of the appropriate symbols.
- Manufactured under license from Dolby Laboratories. “Dolby”, “Pro Logic” and the “double-D symbol”, are trademarks of Dolby Laboratories.

2.3.2 Schematic Notes

- All resistor values are in ohms, and the value multiplier is often used to indicate the decimal point location (e.g. 2K2 indicates 2.2 kohm).
- Resistor values with no multiplier may be indicated with either an “E” or an “R” (e.g. 220E or 220R indicates 220 ohm).
- All capacitor values are given in micro-farads ($\mu = \times 10^{-6}$), nano-farads ($n = \times 10^{-9}$), or pico-farads ($p = \times 10^{-12}$).
- Capacitor values may also use the value multiplier as the decimal point indication (e.g. 2p2 indicates 2.2 pF).
- An “asterisk” (*) indicates component usage varies. Refer to the diversity tables for the correct values.
- The correct component values are listed in the Spare Parts List. Therefore, always check this list when there is any doubt.

2.3.3 BGA (Ball Grid Array) ICs

Introduction

For more information on how to handle BGA devices, visit this URL: *www.atyourservice.ce.philips.com* (needs subscription, not available for all regions). After login, select “Magazine”, then go to “Repair downloads”. Here you will find Information on how to deal with BGA-ICs.

BGA Temperature Profiles

For BGA-ICs, you **must** use the correct temperature-profile, which is coupled to the 12NC. For an overview of these profiles, visit the website *www.atyourservice.ce.philips.com* (needs subscription, but is not available for all regions).
You will find this and more technical information within the “Magazine”, chapter “Repair downloads”.
For additional questions please contact your local repair help desk.

2.3.4 Lead-free Soldering

Due to lead-free technology some rules have to be respected by the workshop during a repair:

- Use only lead-free soldering tin Philips SAC305 with order code 0622 149 00106. If lead-free solder paste is required, please contact the manufacturer of your soldering equipment. In general, use of solder paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for lead-free soldering tin. The solder tool must be able:
  – To reach a solder-tip temperature of at least 400°C.
  – To stabilize the adjusted temperature at the solder-tip.
  – To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature of around 360°C - 380°C is reached and stabilized at the solder joint. Heating time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C, otherwise wear-out of tips will increase drastically and flux-fluid will be destroyed.

To avoid wear-out of tips, switch “off” unused equipment or reduce heat.

- Mix of lead-free soldering tin/parts with leaded soldering tin/parts is possible but PHILIPS recommends strongly **to avoid** mixed regimes. If this cannot be avoided, carefully clear the solder-joint from old tin and re-solder with new tin.

2.3.5 Alternative BOM identification

The **third digit** in the serial number (example: AG**2**B0335000001) indicates the number of the alternative B.O.M. (Bill Of Materials) that has been used for producing the specific TV set. In general, it is possible that the same TV model on the market is produced with e.g. two different types of displays, coming from two different suppliers. This will then result in sets which have the same CTN (Commercial Type Number; e.g. 28PW9515/12) but which have a different B.O.M. number.
By looking at the third digit of the serial number, one can identify which B.O.M. is used for the TV set he is working with. If the third digit of the serial number contains the number “1” (example: AG**1**B033500001), then the TV set has been manufactured according to B.O.M. number 1. If the third digit is a “2” (example: AG**2**B0335000001), then the set has been produced according to B.O.M. no. 2. ***This is important for ordering the correct spare parts!***
For the third digit, the numbers 1...9 and the characters A...Z can be used, so in total: 9 plus 26= 35 different B.O.M.s can be indicated by the third digit of the serial number.

Identification: The bottom line of a type plate gives a 14-digit serial number. Digits 1 and 2 refer to the production center (e.g. AG is Bruges), digit 3 refers to the B.O.M. code, digit 4 refers to the Service version change code, digits 5 and 6 refer to the production year, and digits 7 and 8 refer to production week (in example below it is 2006 week 17). The 6 last digits contain the serial number.

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Figure 2-1 Serial number (example)

2.3.6 Board Level Repair (BLR) or Component Level Repair (CLR)

If a board is defective, consult your repair procedure to decide if the board has to be exchanged or if it should be repaired on component level.
If your repair procedure says the board should be exchanged completely, do not solder on the defective board. Otherwise, it cannot be returned to the O.E.M. supplier for back charging!

2.3.7 Practical Service Precautions

- **It makes sense to avoid exposure to electrical shock.** While some sources are expected to have a possible dangerous impact, others of quite high potential are of limited current and are sometimes held in less regard.
- **Always respect voltages**. While some may not be dangerous in themselves, they can cause unexpected reactions that are best avoided. Before reaching into a powered TV set, it is best to test the high voltage insulation. It is easy to do, and is a good service precaution.

3. Directions for Use

You can download this information from the following websites:
http://www.philips.com/support
http://www.p4c.philips.com

4. Mechanical Instructions

Index of this chapter:

4.1 Cable Dressing
4.2 Service Positions
4.3 Assy/Panel Removal
4.4 Set Re-assembly

Notes:

- Figures below can deviate slightly from the actual situation, due to the different set executions.
- Follow the disassemble instructions in described order. They apply to the 32" sets.

4.1 Cable Dressing

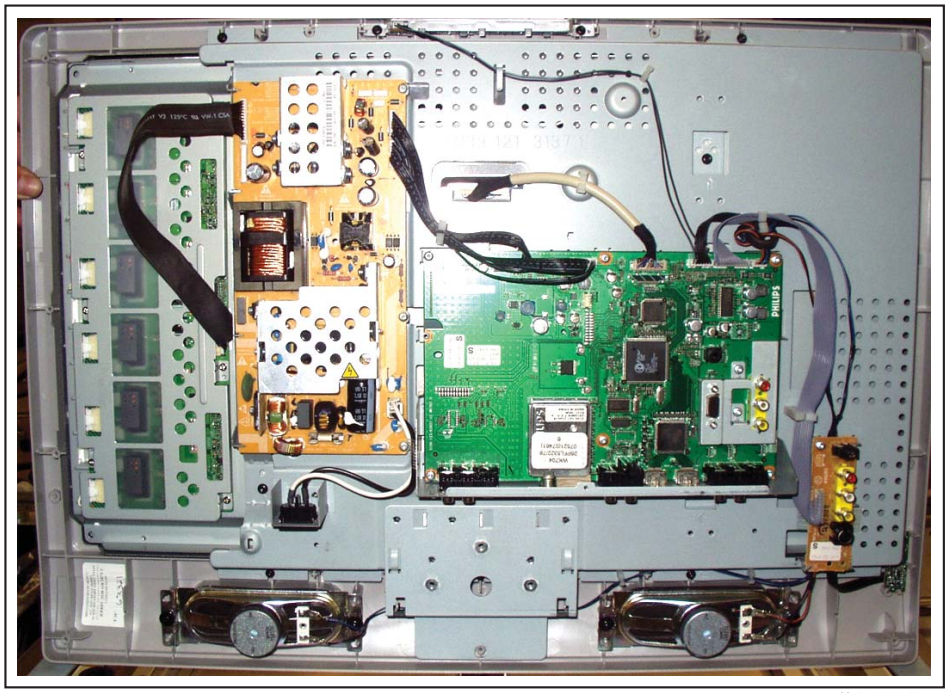

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Figure 4-1 Cable dressing (26" models)

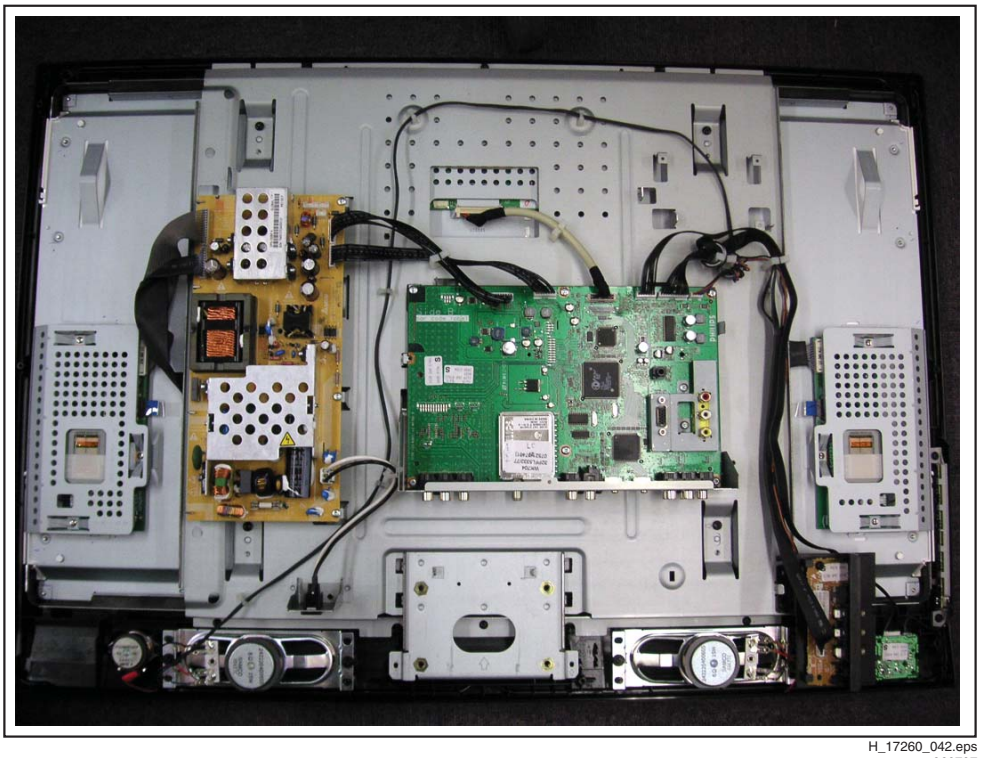

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Figure 4-2 Cable dressing (32" models)

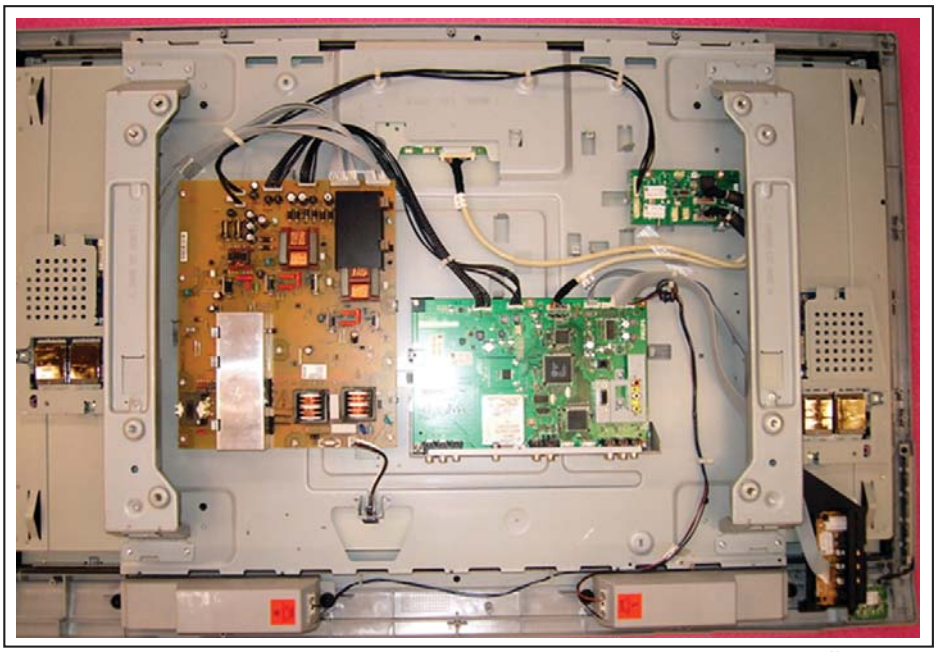

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Figure 4-3 Cable dressing (37 and 42” models without 1080p module)

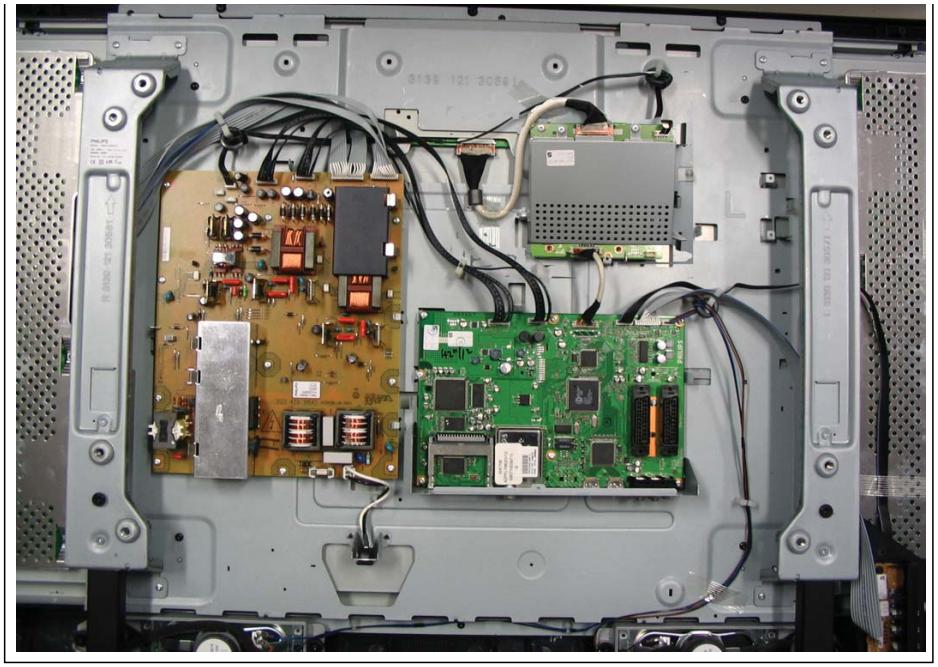

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Figure 4-4 Cable dressing (42” models with 1080p module)

Figure 4-5 Cable dressing (52" models)

4.2 Service Positions

For easy servicing of this set, there are a few possibilities created:

- The buffers from the packaging.
- Foam bars (created for Service).
- Aluminium service stands (created for Service).

Note: the aluminium service stands can only be used when the set is equipped with so-called “mushrooms”. Otherwise use the original stand that comes with the set.

4.2.1 Foam Bars

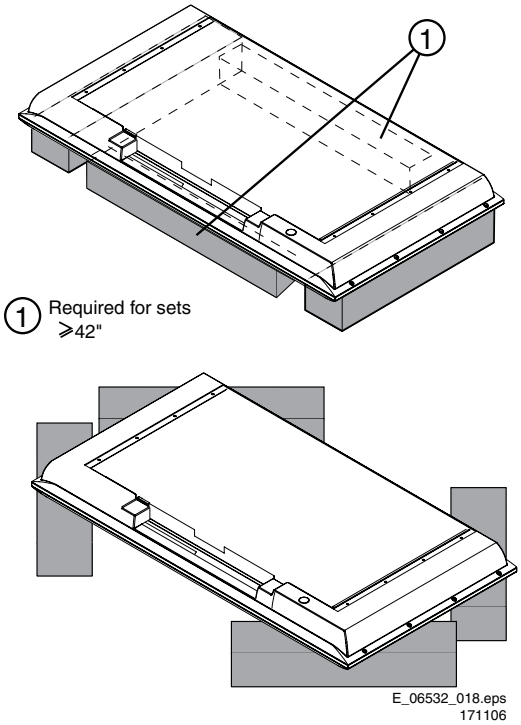


Figure 4-6 Foam bars

The foam bars (order code 3122 785 90580 for two pieces) can be used for all types and sizes of Flat TVs. See figure “Foam bars” for details. Sets with a display of 42" and larger, require **four** foam bars [1]. Ensure that the foam bars are always supporting the cabinet and **never** only the display. **Caution:** Failure to follow these guidelines can seriously damage the display!
By laying the TV face down on the (ESD protective) foam bars, a stable situation is created to perform measurements and alignments. By placing a mirror under the TV, you can monitor the screen.

4.2.2 Aluminium Stands

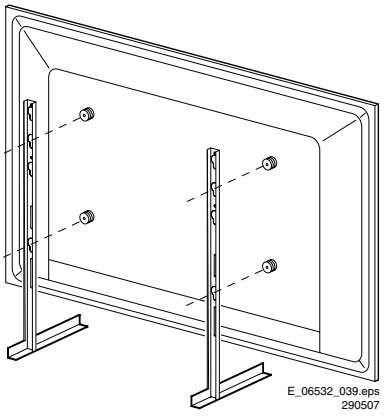


Figure 4-7 Aluminium stands

The MkII aluminium stands with order code 3122 785 90690, can also be used to do measurements, alignments, and duration tests. The stands can be (dis)mounted quick and easy by means of sliding them in/out the “mushrooms”. The stands are backwards compatible with the earlier models.
Important: For (older) FTV sets without these “mushrooms”, it is obligatory to use the provided screws, otherwise it is possible to damage the monitor inside!

4.3 Assy/Panel Removal

4.3.1 Rear Cover

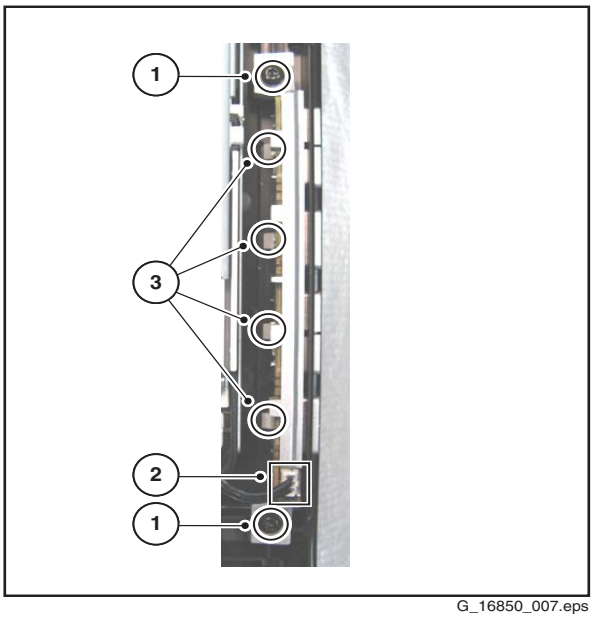
Warning: Disconnect the mains power cord before you remove the rear cover.

1. Place the TV set upside down on a table top, using the foam bars (see part “Service Position”).
2. Remove rear cover screws and the stand (if mounted).
3. Remove rear cover.

4.3.2 Keyboard Control Panel

1. Remove the rear cover, as described earlier.
2. Refer to fig. “Keyboard control panel” below.
3. Remove the T10 parker screws [1].
4. Unplug connector [2].
5. Remove the unit.
6. Release clips [3] and remove the board.

When defective, replace the whole unit.



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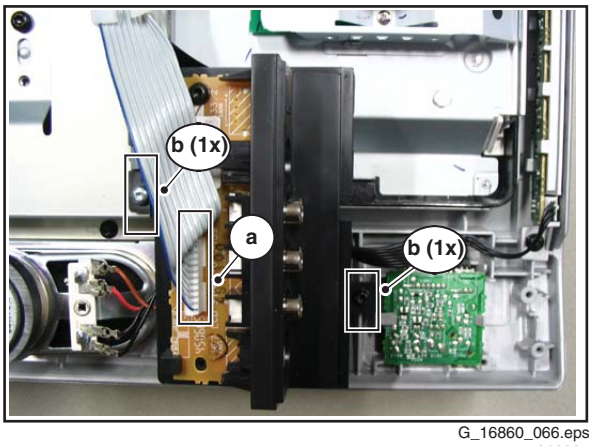
310707

Figure 4-8 Keyboard control panel

4.3.3 Side I/O Panel

1. Remove the rear cover, as described earlier.
2. Unplug connector [a].
3. Remove screws [b] and remove the complete module. One of the screws is T10 tapping, the other one is T10 parker. See fig. “Side I/O module”.
4. Remove T10 parker screw [c]. See fig. “Side I/O panel 1”.
5. Push catch [d] (located at the underside of the bracket) and slide the unit to the right from its bracket [e]. See fig. “Side I/O panel 2”.
6. To remove the PWB from its bracket, you have to lift the catch [f] located on top of the headphone connector. At the same time, slide the PWB out of its bracket [g]. See fig. “Side I/O panel 3”.

When defective, replace the whole unit.



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010207

Figure 4-9 Side I/O module

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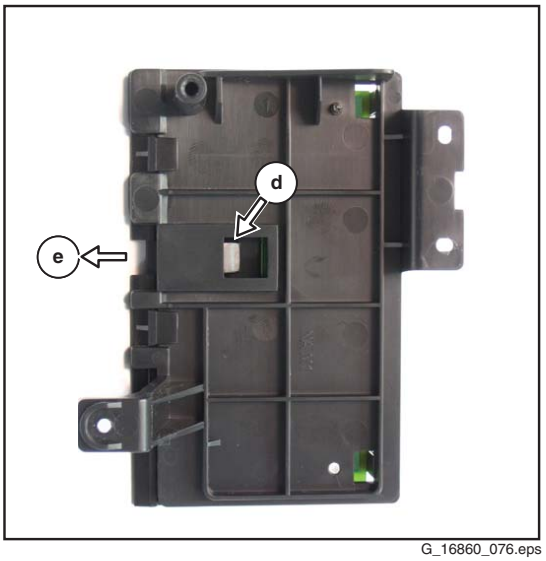
Figure 4-10 Side I/O panel [1/3] top side



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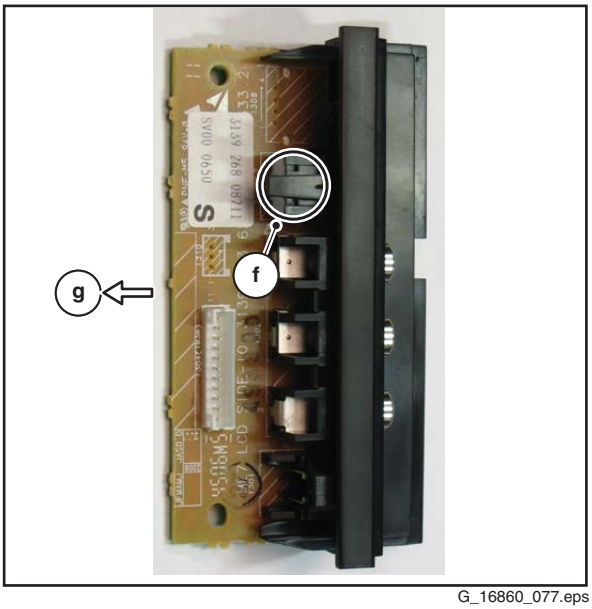
010207

Figure 4-11 Side I/O panel [2/3] bottom side



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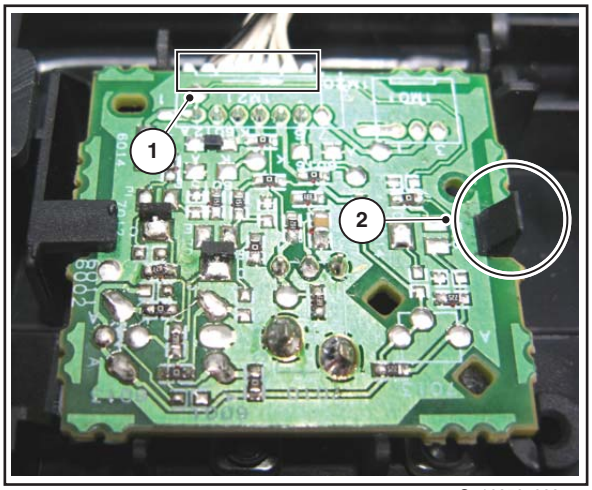
010207

Figure 4-12 Side I/O panel [3/3]

4.3.4 IR/LED Panel

1. Remove the rear cover, as described earlier.
2. Refer to fig. “IR/LED panel” below.
3. Unplug connector(s) [1].
4. Release clip [2] and remove the board.

When defective, replace the whole unit.



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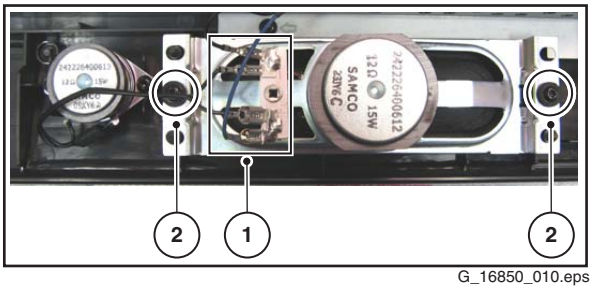
110107

Figure 4-13 IR/LED panel

4.3.5 Mid-range Speakers

1. Remove the rear cover, as described earlier.
2. Refer to fig. “Mid-range speakers” below.
3. Unplug connectors [1].
4. Remove T10 parker screws [2].



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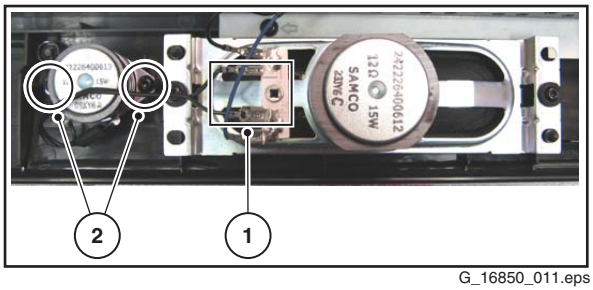
110107

Figure 4-14 Mid-range speakers

4.3.6 Tweeters

1. Remove the rear cover, as described earlier.
2. Refer to fig. “Tweeters” below.
3. Unplug connectors [1].
4. Remove T10 parker screws [2].



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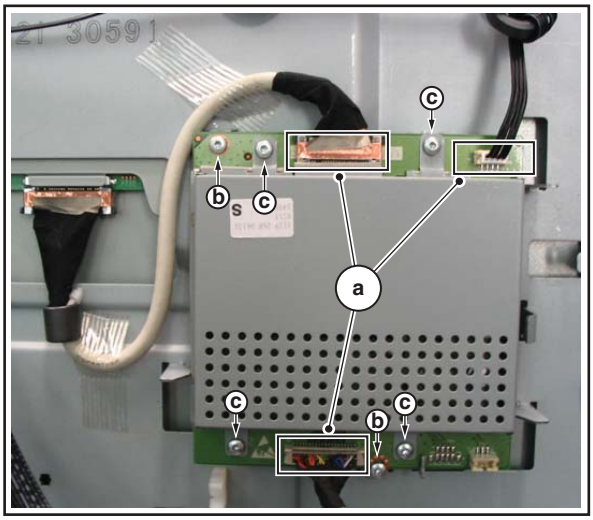
110107

Figure 4-15 Tweeters

4.3.7 1080p Panel

1. Refer to next figure(s).
2. Unplug cables [a]. Be careful with the LVDS connectors as they are very fragile.
3. Remove the fixation screws [b].
4. Take the board out (it hinges at the lower side).
5. Remove the screws [c] that fixate the top and bottom shieldings, and remove the shieldings.

Note: Pay special attention not to damage the EMC foams. Ensure that EMC foams are mounted correctly, especially notice the large EMC foam “block” [d] at the bottom shielding.



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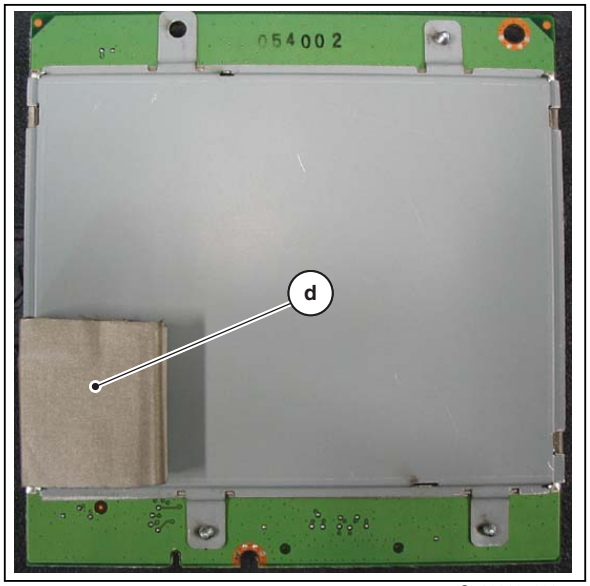
150307

Figure 4-16 1080p panel



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150307

Figure 4-17 Bottom shielding 1080p panel

4.3.8 Small Signal Board (SSB)

1. Remove the rear cover, as described earlier.
2. Refer to figures “SSB removal” below.
3. Disconnect all cables [a] on the SSB.
4. Remove the T10 tapping screws [b] that hold the SSB. See Figure “SSB removal”.
5. Remove the screws that hold the CINCH and HDMI connectors at the connector panel.
6. Lift the SSB from the set.

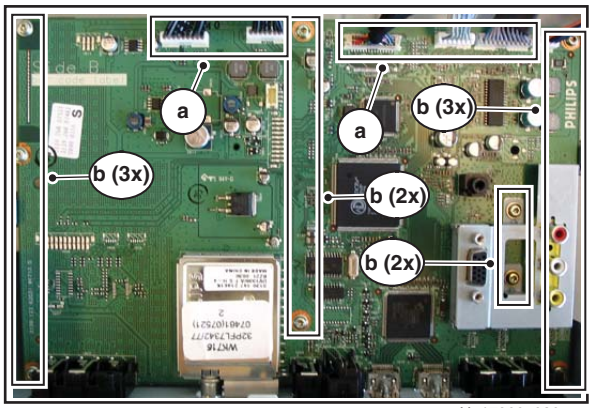

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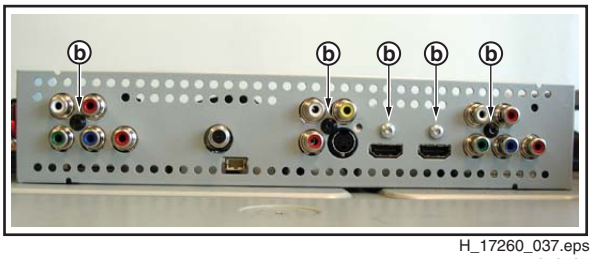
Figure 4-18 SSB removal -1-



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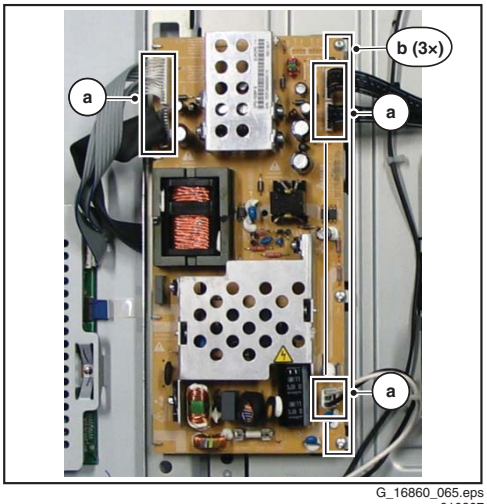
050707

Figure 4-19 SSB removal -2-

4.3.9 Main Supply Panel

1. Remove the rear cover, as described earlier.
2. Refer to fig. “Main supply panel” below.
3. Unplug cables [a].
4. Remove the fixation screws [b].
5. Take the board out (it hinges at the left side).



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010207

Figure 4-20 Main supply panel

4.3.10 LCD Panel

1. Remove the rear cover, as described earlier.
2. Refer to fig. “LCD panel” below.
3. Unplug the connectors on the Main Supply Panel [a] and the LED & IR board [c].
4. Unplug the outer connectors [d] from the mid-range loudspeakers.
5. **Do NOT forget** to unplug the LVDS connector [e] from the SSB. **Important:** Be careful, as this is a very fragile connector!
6. Remove T10 parker screw [b] that holds the Side I/O module bracket.
7. Remove T10 parker screws [f] of the central sub-frame.
8. Remove LCD panel fixation screws [g] and lift the complete central sub-frame from the set (including the PSU, SSB, and Side I/O boards and wiring).
9. Lift the LCD panel [7] from the front cabinet.

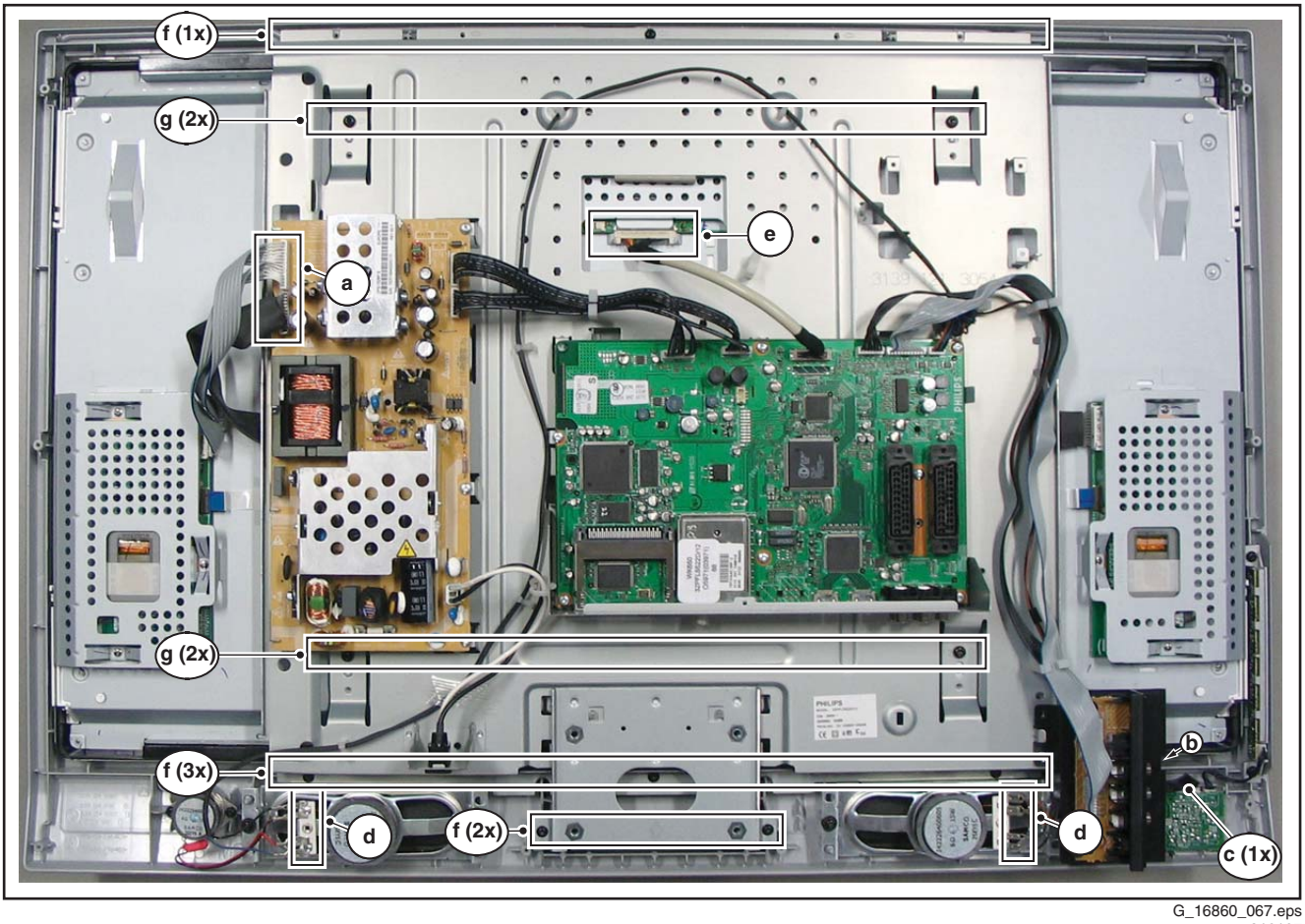

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Figure 4-21 LCD panel [1/2]

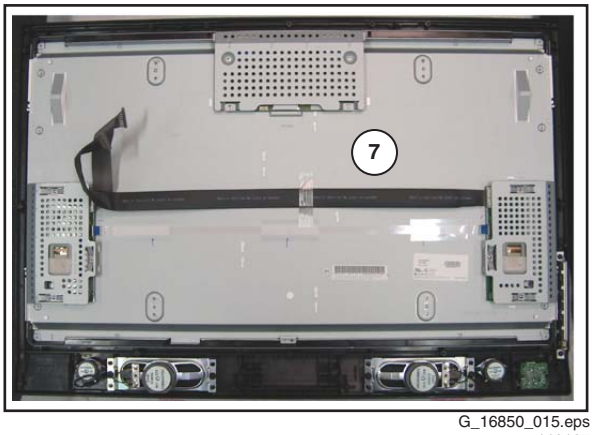

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Figure 4-22 LCD panel [2/2]

4.4 Set Re-assembly

To re-assemble the whole set, execute all processes in reverse order.

Notes:

- While re-assembling, make sure that all cables are placed and connected in their original position. See figure “Cable dressing”.
- Pay special attention not to damage the EMC foams. Ensure that EMC foams are mounted correctly (one is located above the LVDS connector on the display, between the LCD display and the metal sub-frame).

5. Service Modes, Error Codes, and Fault Finding

Index of this chapter:

5.1 Test Points
5.2 Service Modes
5.3 Service Tools
5.4 Error Codes
5.5 The Blinking LED Procedure
5.7 Fault Finding and Repair Tips

5.1 Test Points

In the chassis schematics and layout overviews, the test points (Fxxx) are mentioned. In the schematics, test points are indicated with a rectangular box around “Fxxx” or “Ixxx”, in the layout overviews with a “half-moon” sign.
As most signals are digital, it will be difficult to measure waveforms with a standard oscilloscope. Several key ICs are capable of generating test patterns, which can be controlled via ComPair. In this way it is possible to determine which part is defective.

Perform measurements under the following conditions:
- Service Default Mode.
- Video: Color bar signal.
- Audio: 3 kHz left, 1 kHz right.

5.2 Service Modes

The Service Mode feature is split into four parts:
- Service Default Mode (SDM).
- Service Alignment Mode (SAM).
- Customer Service Mode (CSM) and Digital Customer Service Mode (DCSM).
- Computer Aided Repair Mode (ComPair).

SDM and SAM offer features, which can be used by the Service engineer to repair/align a TV set. Some features are:
- A pre-defined situation to ensure measurements can be made under uniform conditions (SDM).
- Activates the blinking LED procedure for error identification when no picture is available (SDM).
- The possibility to overrule software protections when SDM was entered via the Service pins.
- Make alignments (e.g. white tone), (de)select options, enter options codes, reset the error buffer (SAM).
- Display information (“SDM” or “SAM” indication in upper right corner of screen, error buffer, software version, operating hours, options and option codes, submenus).

The (D)CSM is a Service Mode that can be enabled by the consumer. Instructions on how to enable the CSM can be given by telephone by either the dealer or the P3C (Philips Customer Care Center). The CSM displays diagnosis information, which the customer can forward to the dealer/P3C. In CSM mode, “CSM”, is displayed in the top right corner of the screen.

The information provided in CSM and the purpose of CSM is to:
- Increase the home repair hit rate
- Decrease the number of nuisance calls
- Solved customers' problem without home visit

ComPair Mode is used for communication between a computer and a TV on I2C /UART level and can be used by a Service engineer to quickly diagnose the TV set by reading out error codes, read and write in NVMs, communicate with ICs and the uP (PWM, registers, etc.), and by making use of a faultfinding database. It will also be possible to up and download the software of the TV set via I2C with help of ComPair. To do this, ComPair has to be connected to the TV set via the ComPair connector, which will be accessible through the rear of the set (without removing the rear cover).

5.2.1 General

Some items are applicable to all Service Modes or are general. These are listed below.

Life Timer
During the life time cycle of the TV set, a life timer is kept. This life timer counts the normal operation hours, but not the Stand-by hours. The actual value of the life timer is displayed in SDM and CSM in a decimal value. Every two soft-resets should increase the hour by +1. Minimal five digits are displayed.

Software Identification, Version, and Cluster
The software identification, version, and cluster will be shown in the main menu display of SDM, SAM, and CSM.
The screen will show: “**AAAABCD X.YY**”, where:
- **AAAA** is the chassis name: LC71 for analogue range (non-DVB), LC72 for digital range (DVB).
- **B** is the region indication: E= Europe, A= AP/China, U= NAFTA, L= LATAM.
- **C** is the display indication: L= LCD, P= Plasma.
- **D** is the language/features indication: 1= standard, H= 1080p full HD.
- **X** is the main version number: The main version number is updated with a major change of specification (incompatible with the previous software version). Numbering will go from 1 - 9 then from A - Z.
  - If the main version number changes, the new version number is written in the NVM
  - If the main version number changes, the default settings are loaded
- **YY** is the sub version number: The sub version number is updated with a minor change (backwards compatible with the previous versions) Numbering will go from 00 - 99.
  - If the sub version number changes, the new version number is written in the NVM
  - If the NVM is fresh, the software identification, version, and cluster will be written to NVM

Display Option Code Selection
When after a display exchange, the display option code is not properly set, it will result in a TV with “no display”. Therefore, **it is required** to set this display option code after such a repair.

To do so, press the following key sequence on a standard RC transmitter: “**062598**” directly followed by **MENU** and “**xxx**”, where “xxx” is a 3 digit decimal value of the panel type (see first column in table “Option codes OP1...OP7” in Chapter “Alignments” or sticker on the side/bottom of the cabinet). When the value is properly accepted and stored in NVM, the set will switch to Stand-by, to indicate that the process has been completed successfully.

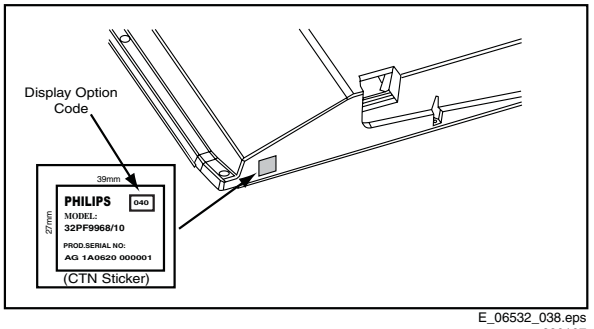

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Figure 5-1 Location of Display Option Code sticker

During this algorithm, the NVM-content must be filtered, because several items in the NVM are TV-related and not SSB-related (e.g. Model and Prod. S/N). Therefore, “Model” and “Prod. S/N” data is changed into “See Type Plate”.
In case a call centre or consumer reads “See Type Plate” in CSM mode, he needs to look to the side/bottom sticker to identify the set, for further actions.

5.2.2 Service Default Mode (SDM)

Purpose

Set the TV in SDM mode in order to be able to:

- Create a predefined setting for measurements to be made.
- Override software protections.
- Start the blinking LED procedure.
- Read the error buffer.
- Check the life timer.

Specifications

Table 5-1 SDM default settings

Region	Frequency (MHz)	Default system
Europe (except France), AP-PAL/-Multi	475.25	PAL B/G
France		SECAM L
NAFTA, AP-NTSC	61.25 (channel 3)	NTSC M
LATAM		PAL M

- Set linear video and audio settings to 50%, but volume to 25%. Stored user settings are not affected.
- All service-unfriendly modes (if present) are disabled, since they interfere with diagnosing/repairing a set. These service unfriendly modes are:
  - (Sleep) timer.
  - Blue mute/Wall paper.
  - Auto switch “off” (when there is no “ident” signal).
  - Hotel or hospital mode.
  - Child lock or parental lock (manual or via V-chip).
  - Skipping, blanking of “Not favorite”, “Skipped” or “Locked” presets/channels.
  - Automatic storing of Personal Preset or Last Status settings.
  - Automatic user menu time-out (menu switches back/ OFF automatically.
  - Auto Volume levelling (AVL).

How to Activate

To activate SDM, use **one** of the following methods:

- Press the following key sequence on the remote control transmitter: “**062596**” directly followed by the **MENU** button (do not allow the display to time out between entries while keying the sequence).
- Short one of the “Service” jumpers on the TV board during cold start (see Figures “Service jumper”). Then press the mains button (remove the short after start-up). **Caution**: Activating SDM by shorting “Service” jumpers will override the DC speaker protection (error 1), the General I2C error (error 4), and the Trident video processor error (error 5). When doing this, the service-technician must know exactly what he is doing, as it could damage the television set.

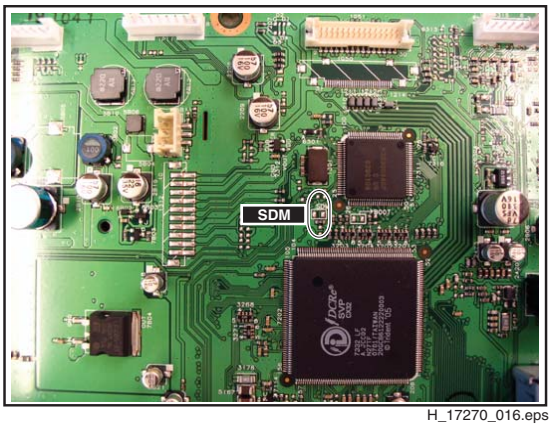

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Figure 5-2 Service jumper (SSB component side)

On Screen Menu

After activating SDM, the following screen is visible, with SDM in the upper right corner of the screen to indicate that the television is in Service Default Mode.

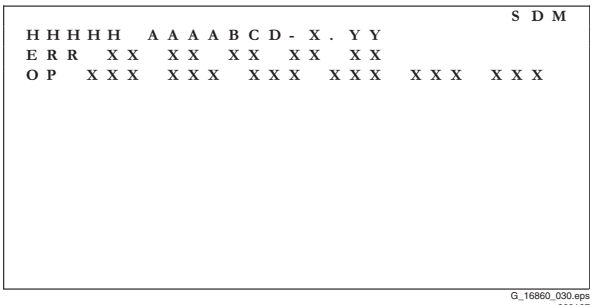

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Figure 5-3 SDM menu

Menu explanation:

- **HHHHH**: Are the operating hours (in decimal).
- **AAAABCD-X.YY**: See paragraph “Service Modes” -> “General” -> “Software Identification, Version, and Cluster” for the SW name definition.
- **SDM**: The character “SDM” to indicate that the TV set is in Service mode.
- **ERR**: Shows all errors detected since the last time the buffer was erased. Five errors possible.
- **OP**: Used to read-out the option bytes. See “Options” in the Alignments section for a detailed description. Seven codes are possible.

How to Navigate

As this mode is read only, there is not much to navigate. To switch to other modes, use one of the following methods:

- Command MENU from the user remote will enter the normal user menu (brightness, contrast, color, etc...) with “SDM” OSD remaining, and pressing MENU key again will return to the last status of SDM again.
- To prevent the OSD from interfering with measurements in SDM, command “OSD” (“STATUS” for NAFTA and LATAM) from the user remote will toggle the OSD “on/off” with “SDM” OSD remaining always “on”.
- Press the following key sequence on the remote control transmitter: “**062596**” directly followed by the **OSD/i+** button to switch to SAM (do not allow the display to time out between entries while keying the sequence).

How to Exit

Switch the set to STANDBY by pressing the mains button on the remote control transmitter or on the television set.
If you switch the television set "off" by removing the mains (i.e., unplugging the television), the television set will remain in SDM when mains is re-applied, and the error buffer is not cleared. The error buffer will only be cleared when the "clear" command is used in the SAM menu.

Note:

- If the TV is switched "off" by a power interrupt while in SDM, the TV will show up in the last status of SDM menu as soon as the power is supplied again. The error buffer will not be cleared.
- In case the set is in Factory mode by accident (with "F" displayed on screen), by pressing and hold "VOL-" and "CH-" together should leave Factory mode.

5.2.3 Service Alignment Mode (SAM)

Purpose

- To change option settings.
- To display / clear the error code buffer.
- To perform alignments.

Specifications

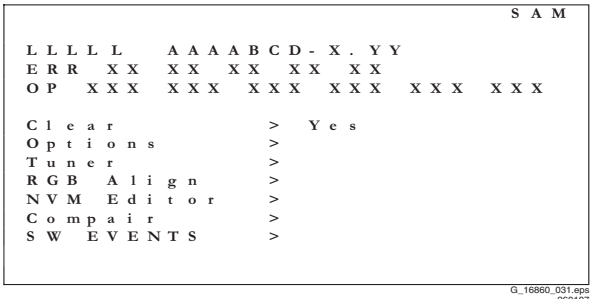
- Operation hours counter (maximum five digits displayed).
- Software version, error codes, and option settings display.
- Error buffer clearing.
- Option settings.
- Software alignments (Tuner, White Tone and Audio).
- NVM Editor.
- ComPair Mode switching.
- Set the screen mode to full screen (all contents on screen are viewable).

How to Activate

To activate SAM, use one of the following methods:

- Press the following key sequence on the remote control transmitter: "**062596**" directly followed by the **OSD/ STATUS/INFO/i+** button (it depends on region which button is present on the RC). Do not allow the display to time out between entries while keying the sequence.
- Or via ComPair.

After entering SAM, the following screen is visible, with SAM in the upper right corner of the screen to indicate that the television is in Service Alignment Mode.


S A M
L L L L L A A A A B C D - X . Y Y
E R R X X X X X X X X X X
O P X X X X X X X X X X X X X X
C l e a r > Y e s
O p t i o n s >
T u n e r >
R G B A l i g n >
N V M E d i t o r >
C o m p a i r >
S W E V E N T S >
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260107

Figure 5-4 SAM menu

Menu explanation:

1. **LLLLL.** This represents the run timer. The run timer counts normal operation hours, but does not count Stand-by hours.
2. **AAAABCD-X.YY.** See paragraph "Service Modes" -> "General" -> "Software Identification, Version, and Cluster" for the SW name definition.
3. **SAM.** Indication of the Service Alignment Mode.
4. **ERR (ERRor buffer).** Shows all errors detected since the last time the buffer was erased. Five errors possible.
5. **OP (Option Bytes).** Used to read-out the option bytes. See "Options" in the Alignments section for a detailed description. Seven codes are possible.
6. **Clear.** Erases the contents of the error buffer. Select the CLEAR menu item and press the MENU RIGHT key. The content of the error buffer is cleared.
7. **Options.** Used to set the option bits. See "Options" in the "Alignments" chapter for a detailed description.
8. **Tuner.** Used to align the tuner. See "Tuner" in the "Alignments" chapter for a detailed description.
9. **RGB Align.** Used to align the White Tone. See "White Tone" in the "Alignments" chapter for a detailed description.
10. **NVM Editor.** Can be used to change the NVM data in the television set. See also paragraph "Fault Finding and Repair Tips" further on.
11. **ComPalr.** Can be used to switch the television to "In Application Programming" mode (IAP), for software uploading via ComPair. Read paragraph "Service Tools" -> "ComPair". **Caution:** When this mode is selected without ComPair connected, the TV will be blocked. Remove the AC power to reset the TV.
12. **SW Events.** Only to be used by development to monitor SW behavior during stress test.

How to Navigate

- In the SAM menu, select menu items with the MENU UP/ DOWN keys on the remote control transmitter. The selected item will be indicated. When not all menu items fit on the screen, use the MENU UP/DOWN keys to display the next / previous menu items.
- With the MENU LEFT/RIGHT keys, it is possible to:
  - Activate the selected menu item.
  - Change the value of the selected menu item.
  - Activate the selected submenu.
- When you press the MENU button twice while in top level SAM, the set will switch to the normal user menu (with the SAM mode still active in the background). To return to the SAM menu press the MENU button.
- Command "OSD/i+" key from the user remote will toggle the OSD "on/off" with "SAM" OSD remaining always "on".
- Press the following key sequence on the remote control transmitter: "**062596**" directly followed by the **MENU** button to switch to SDM (do not allow the display to time out between entries while keying the sequence).

How to Store SAM Settings

To store the settings changed in SAM mode (except the OPTIONS settings), leave the top level SAM menu by using the POWER button on the remote control transmitter or the television set.

How to Exit

Switch the set to STANDBY by pressing the mains button on the remote control transmitter or the television set.

Note:

- When the TV is switched "off" by a power interrupt while in SAM, the TV will show up in "normal operation mode" as soon as the power is supplied again. The error buffer will not be cleared.
- In case the set is in Factory mode by accident (with "F" displayed on screen), by pressing and hold "VOL-" and "CH-" together should leave Factory mode.

5.2.4 Customer Service Mode (CSM)

Purpose

The Customer Service Mode shows error codes and information on the TV's operation settings. A call centre can instruct the customer (by telephone) to enter CSM in order to identify the status of the set. This helps them to diagnose problems and failures in the TV before making a service call. The CSM is a read-only mode; therefore, modifications are not possible in this mode.

Specifications

- Ignore "Service unfriendly modes".
- Line number for every line (to make CSM language independent).
- Set the screen mode to full screen (all contents on screen are viewable).
- After leaving the Customer Service Mode, the original settings are restored.
- Possibility to use "CH+" or "CH-" for channel surfing, or enter the specific channel number on the RC.

How to Activate

To activate CSM, press the following key sequence on the remote control transmitter: "**123654**" (do not allow the display to time out between entries while keying the sequence).

Upon entering the Customer Service Mode, the following screen will appear:

```
                                                    C S M
1    M O D E L  : 3 2 P F L 5 5 2 2 D / 1 0
2    P R O D  S / N : A G 1 A 0 7 1 2 1 2 3 4 5 6
3    S W  I D  : L C 7 1 E L 1 - 1 . x x
4    O P       : X X X  X X X  X X X  X X X  X X X  X X X
5    C O D E S  : X X  X X  X X  X X  X X
6    S S B      : 3 1 3 9  1 2 7  1 2 3 4 1
7    N V M      : X X X X X X X X
8    F l a s h  D a t a : X X . X X . X X . X X
9    L I F E  T I M E R : L L L L L
10   T U N E R  : W E A K / G O O D / S T R O N G
11   S Y S T E M : P A L / N T S C / S E C A M
12   S O U N D  : M O N O / S T E R E O / N I C A M
13   H D A U    : Y E S / N O
14   F O R M A T : X X X X X X X X
```

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Figure 5-5 CSM menu

Menu Explanation

1. **MODEL.** Type number, e.g. 32PFL5522D/10. (*)
2. **PROD S/N.** Product serial no., e.g. AG1A0712123456. (*)
3. **SW ID.** Software cluster and version is displayed.
4. **OP.** Option code information.
5. **CODES.** Error buffer contents.
6. **SSB.** Indication of the SSB factory identification code (12nc). (*)
7. **NVM.** The NVM software version no.
8. **Flash Data.** PQ (picture quality) and AQ (audio quality) data version. This is a sub set of the main SW.
9. **LIFE TIMER.** Operating hours indication.
10. **TUNER.** Indicates the tuner signal condition: "Weak" when signal falls below threshold value, "Medium" when signal is at mid-range, and "Strong" when signal falls above threshold value.
11. **SYSTEM.** Gives information about the video system of the selected transmitter (PAL/SECAM/NTSC).
12. **SOUND.** Gives information about the audio system of the selected transmitter (MONO/STEREO/NICAM).
13. **HDAU.** HDMI audio stream detection. "YES" means audio stream detected. "NO" means no audio stream present. Only displayed when HDMI source is selected.
14. **FORMAT.** Gives information about the video format of the selected transmitter (480i/480p/720p/1080i).
15. **HD SW ID.** Software version of the 1080p full HD module (when present).
16. **Reserved.**
17. **Reserved.**
18. **Reserved.**

(*) If an NVM IC is replaced or initialized, this data must be re-written to the NVM. ComPair will foresee in a possibility to do this.

How to Exit

To exit CSM, use one of the following methods:

- Press the MENU button twice, or POWER button on the remote control transmitter.
- Press the POWER button on the television set.

5.3 Service Tools

5.3.1 ComPair

Introduction

ComPair (Computer Aided Repair) is a Service tool for Philips Consumer Electronics products. and offers the following:

1. ComPair helps you to quickly get an understanding on how to repair the chassis in a short and effective way.
2. ComPair allows very detailed diagnostics and is therefore capable of accurately indicating problem areas. You do not have to know anything about I2C or UART commands yourself, because ComPair takes care of this.
3. ComPair speeds up the repair time since it can automatically communicate with the chassis (when the uP is working) and all repair information is directly available.
4. ComPair features TV software upgrade possibilities.

Specifications

ComPair consists of a Windows based fault finding program and an interface box between PC and the (defective) product. The (new) ComPair II interface box is connected **to the PC** via an USB cable. For the TV chassis, the ComPair interface box and the TV communicate via a bi-directional cable via the service connector(s).

How to Connect

This is described in the ComPair chassis fault finding database.

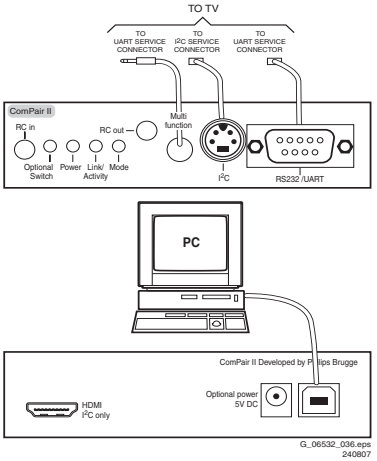


Figure 5-6 ComPair II interface connection

Caution: It is compulsory to connect the TV to the PC as shown in the picture above (with the ComPair interface in between), as the ComPair interface acts as a level shifter. If one connects the TV directly to the PC (via UART), ICs will be blown!

How to Order

ComPair II order codes:

- ComPair II interface: 3122 785 91020.
- ComPair32 CD (update): 3122 785 60160.
- ComPair I²C interface cable: 3122 785 90004 (to be used with chassis L01, A02, A10, EMx, TPM1.xA, etc...).
- ComPair I²C interface extension cable: 3139 131 03791 (to be used with chassis L01, A02, A10, L04, LC4, LC7.1, LC7.2).
- ComPair UART interface cable: 3122 785 90630 (to be used with chassis LC4, EJ3, BJ2, BL2, BP2,...).
- ComPair RS232 cable: 3104 311 12742 (to be used with chassis Q52x).
- ComPair I²C interface cable (3.5 mm Jack-to-SVHS plug): 9965 100 07325 (to be used with chassis LC7.5).
  Note: For I2C it is **compulsory** to use this particular cable.
- ComPair UART interface cable (3.5 mm Jack-to-Jack): 3138 188 75051 (to be used with chassis LC7.5).
  Note: For UART it is also allowed to use a standard "Jack-to-Jack" cable.

Note: If you encounter any problems, contact your local support desk.

5.3.2 LVDS Tool

Support of the LVDS Tool has been discontinued.

5.4 Error Codes

5.4.1 Introduction

Error codes are required to indicate failures in the TV set. In principle a unique error code is available for every:

- Activated protection.
- Failing I2C device.
- General I2C error.
- SDRAM failure.

The last five errors, stored in the NVM, are shown in the Service menu's. This is called the error buffer.
The error code buffer contains all errors detected since the last time the buffer was erased. The buffer is written from left to right. When an error occurs that is not yet in the error code buffer, it is displayed at the left side and all other errors shift one position to the right.
An error will be added to the buffer if this error differs from any error in the buffer. The last found error is displayed on the left.
An error with a designated error code may **never** lead to a deadlock situation. This means that it must always be diagnosable (e.g. error buffer via OSD or blinking LED procedure, ComPair to read from the NVM).
In case a failure identified by an error code automatically results in other error codes (cause and effect), only the error code of the MAIN failure is displayed.

Example: In case of a failure of the I2C bus (CAUSE), the error code for a "General I2C failure" and "Protection errors" is displayed. The error codes for the single devices (EFFECT) is not displayed. All error codes are stored in the same error buffer (TV's NVM) except when the NVM itself is defective.

5.4.2 How to Read the Error Buffer

You can read the error buffer in 3 ways:

- On screen via the SAM/SDM/CSM (if you have a picture). Example:
  - ERROR: 0 0 0 0 0 : No errors detected
  - ERROR: 6 0 0 0 0 : Error code 6 is the last and only detected error
  - ERROR: 9 6 0 0 0 : Error code 6 was detected first and error code 9 is the last detected (newest) error
- Via the blinking LED procedure (when you have no picture). See "The Blinking LED Procedure".
- Via ComPair.

5.4.3 Error Codes

In case of non-intermittent faults, write down the errors present in the error buffer and clear the error buffer before you begin the repair. This ensures that old error codes are no longer present.
If possible, check the entire contents of the error buffer. In some situations, an error code is only the result of another error and not the actual cause of the problem (for example, a fault in the protection detection circuitry can also lead to a protection).

Table 5-2 Error code overview

Error code[1)]	Description	Item no.	Remarks
0	No error.		
1	DC Protection of speakers.		
2	+12V protection error.		12V missing or "low".
3	Reserved.		
4	General I2C error.		note 2
5	Trident Video Processor communication error.	7202	When Trident IC is defective, error 10 and 14 might also be reported. Trident communicates via parallel bus, not via the I2C bus. The I2C bus of Trident is only used in ComPair mode.
6	I2C error while communicating with the NVM.	7315	The TV will not start-up due to critical data not available from the NVM, but the LED will blink the error code.
7	I2C error Tuner.	1101	
8	I2C error IF Demodulator.	7113	
9	I2C error Sound Processor.	7411	
10	SDRAM defective.	7204	
11	I2C error while communicating with the HDMI IC.	7817	
12	I2C error MOJO PNX8314.	7G00	if applicable
13	DVB HW communication error.	7F01, 7K00, 7G00	if applicable
14	SDRAM defective.	7205	
15	Reserved.		
16	Reserved.		
17	I2C error FPGA AmbiLight module.		if applicable
18	I2C error iBoard processor.		if applicable
19	I2C error 1080p module.		if applicable

Notes

1. Some of the error codes reported are depending on the option code configurations.

2. This error means: no I2C device is responding to the particular I2C bus. Possible causes: SCL/SDA shorted to GND, SCL shorted to SDA, or SCL/SDA open (at uP pin). The internal bus of the Trident platform should not cause the entire system to halt as such an error can be reported.

5.4.4 How to Clear the Error Buffer

The error code buffer is cleared in the following cases:
- By using the CLEAR command in the SAM menu:
  - To enter SAM, press the following key sequence on the remote control transmitter: "**062596**" directly followed by the OSD/i+ button (do not allow the display to time out between entries while keying the sequence).
  - Make sure the menu item CLEAR is selected. Use the MENU UP/DOWN buttons, if necessary.
  - Press the MENU RIGHT button to clear the error buffer. The text on the right side of the "CLEAR" line will change from "CLEAR?" to "CLEARED"
- If the contents of the error buffer have not changed for 50 hours, the error buffer resets automatically.

Note: If you exit SAM by disconnecting the mains from the television set, the error buffer is not reset.

5.5 The Blinking LED Procedure

5.5.1 Introduction

The software is capable of identifying different kinds of errors. Because it is possible that more than one error can occur over time, an error buffer is available, which is capable of storing the last five errors that occurred. This is useful if the OSD is not working properly.

Errors can also be displayed by the blinking LED procedure. The method is to repeatedly let the front LED pulse with as many pulses as the error code number, followed by a period of 1.5 seconds in which the LED is "off". Then this sequence is repeated.

Example (1): error code 4 will result in four times the sequence LED "on" for 0.25 seconds / LED "off" for 0.25 seconds. After this sequence, the LED will be "off" for 1.5 seconds. Any RC5 command terminates the sequence. Error code LED blinking is in red color.

Example (2): the content of the error buffer is "**12 9 6 0 0**" After entering SDM, the following occurs:
- 1 long blink of 5 seconds to start the sequence,
- 12 short blinks followed by a pause of 1.5 seconds,
- 9 short blinks followed by a pause of 1.5 seconds,
- 6 short blinks followed by a pause of 1.5 seconds,
- 1 long blink of 1.5 seconds to finish the sequence,
- The sequence starts again with 12 short blinks.

5.5.2 Displaying the Entire Error Buffer

Additionally, the entire error buffer is displayed when Service Mode "SDM" is entered. In case the TV set is in protection or Stand-by: The blinking LED procedure sequence (as in SDM-mode in normal operation) must be triggered by the following RC sequence: "**MUTE" "062500" "OK**".
In order to avoid confusion with RC5 signal reception blinking, this blinking procedure is terminated when a RC5 command is received.

To erase the error buffer, the RC command "**MUTE" "062599 "OK**" can be used.

5.6 TV Main Software Upgrade

For instructions on how to upgrade the TV Main software, refer to ComPair.

5.7 Fault Finding and Repair Tips

Notes:
- It is assumed that the components are mounted correctly with correct values and no bad solder joints.
- Before any fault finding actions, check if the correct options are set.

5.7.1 NVM Editor

In some cases, it can be convenient if one directly can change the NVM contents. This can be done with the "NVM Editor" in SAM mode. With this option, single bytes can be changed.

Caution:
- **Do not change the NVM settings without understanding the function of each setting, because incorrect NVM settings may seriously hamper the correct functioning of the TV set!**
- Always write down the existing NVM settings, before changing the settings. This will enable you to return to the original settings, if the new settings turn out to be incorrect.

Table 5-3 NVM editor overview

	Hexadecimal	Decimal	Description
.ADR	0x000A	10	Existing value
.VAL	0x0000	0	New value
.Store	Store?		

5.7.2 Load Default NVM Values

It is possible to download default values automatically into the NVM in case a blank NVM is placed or when the NVM first 20 address contents are "FF". After the default values are downloaded, it is possible to start-up and to start aligning the TV set. To initiate a forced default download the following action has to be performed:
1. Switch "off" the TV set with the mains cord disconnected from the wall outlet (it does not matter if this is from "Standby" or "Off" situation).
2. Short-circuit the SDM jumpers on the SSB (keep short circuited).
3. Press "P+" or "CH+" on the local keyboard (and keep it pressed).
4. Reconnect the mains supply to the wall outlet.
5. Release the "P+" or "CH+" when the set is "on" or blue LED is blinking.

When the downloading has completed successfully, the set should be into Standby, i.e. red LED on.

Alternative method (1):
1. Go to SAM.
2. Select NVM Editor.
3. Select ADR (address) to 001 (dec).
4. Change the VAL (value) to 170 (dec).
5. Store the value.
6. Do a hard reset to make sure new default values took place.

Alternative method (2):
It is also possible to upload the default values to the NVM with ComPair in case the SW is changed, the NVM is replaced with a new (empty) one, or when the NVM content is corrupted. After replacing an EEPROM (or with a defective/no EEPROM), default settings should be used to enable the set to start-up and

allow the Service Default Mode and Service Alignment Mode to be accessed.

5.7.3 Replacing the SSB flash IC

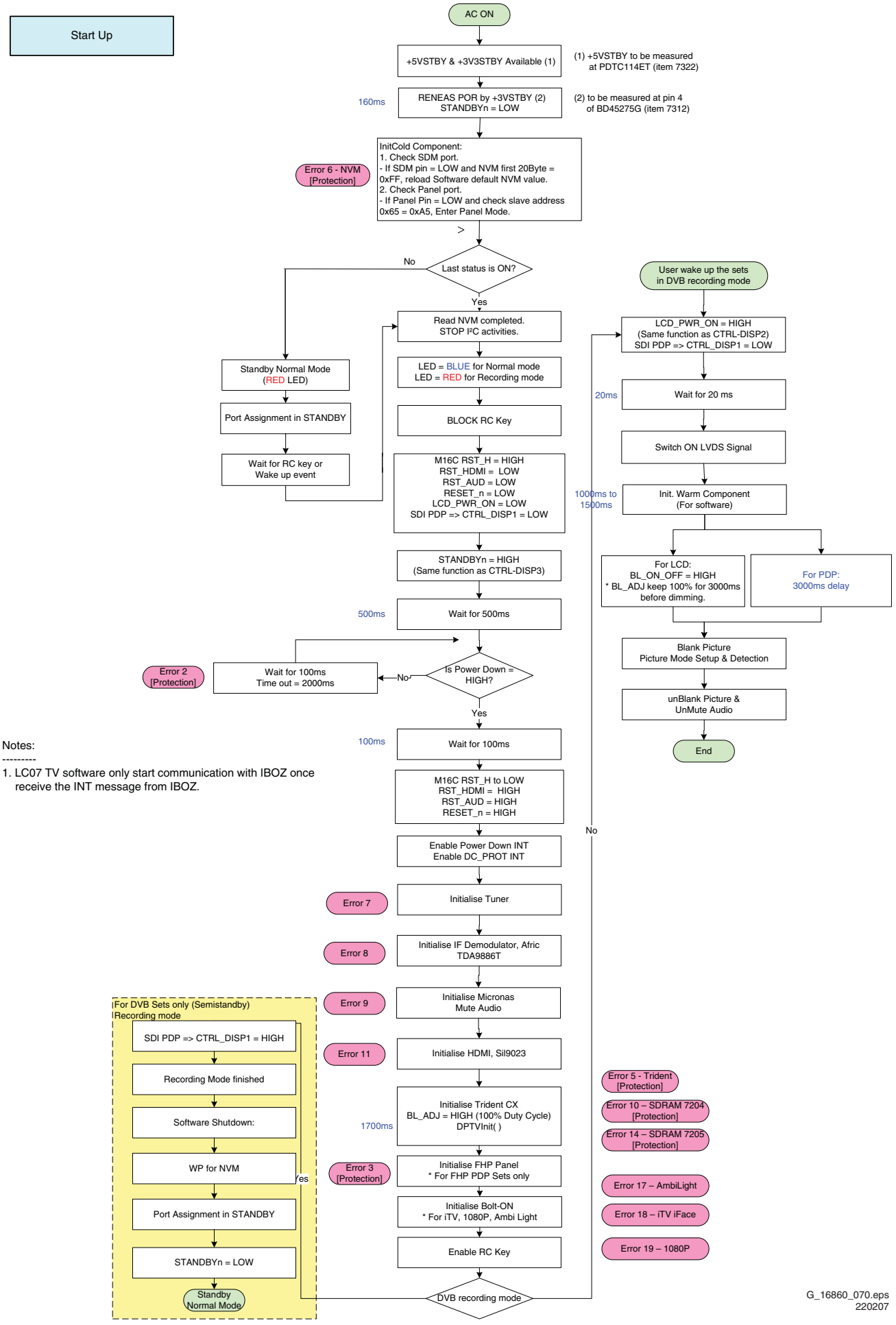
When you have to replace the SSB flash IC (item 7310), refer to the Spare Parts list for the correct order number. You will then receive a pre-programmed flash IC which contains the boot-loader firmware. Without this firmware, you cannot program the TV with ComPair. Therefore you must order the pre-programmed flash IC, which you will receive when using the order number which is listed in the Spare Parts list.

5.7.4 Start-up/Shut-down Flowcharts

Important note for DVB sets:

- When you put a DVB set into Stand-by mode **with an RC**, the set will go to “Semi Stand-by” mode for 5 minutes. This, to facilitate “Off the Air download” (OAD). If there is no activity within these 5 minutes, the set will switch to Stand-by mode. In “Semi Stand-by” mode, the LCD backlight and Audio Amplifier are turned “off” but other circuits still work as normal. The customer might think the set is in Stand-by. However, in real Stand-by mode, only the uP and the NVM are alive and all other circuits are switched “off”.
- If you press **the mains switch** at the local key board in a DVB set, the set will switch to Stand-by mode.

On the next pages you will find start-up and shut-down flowcharts, which might be helpful during fault finding.
It should be noted, that some events are only related to PDP sets, and therefore not applicable to this LCD chassis.


Start Up
AC ON
+5VSTBY & +3V3STBY Available (1)
(1) +5VSTBY to be measured at PDTC114ET (item 7322)
160ms
RENEAS POR by +3VSTBY (2) STANDBYn = LOW
(2) to be measured at pin 4 of BD45275G (item 7312)
Error 6 - NVM [Protection]
InitCold Component:
1. Check SDM port.
- If SDM pin = LOW and NVM first 20Byte = 0xFF, reload Software default NVM value.
2. Check Panel port.
- If Panel Pin = LOW and check slave address 0x65 = 0xA5, Enter Panel Mode.
Last status is ON?
No
Yes
Standby Normal Mode (RED LED)
Port Assignment in STANDBY
Wait for RC key or Wake up event
Read NVM completed. STOP I²C activities.
LED = BLUE for Normal mode LED = RED for Recording mode
BLOCK RC Key
M16C RST_H = HIGH RST_HDMI = LOW RST_AUD = LOW RESET_n = LOW LCD_PWR_ON = LOW SDI PDP => CTRL_DISP1 = LOW
STANDBYn = HIGH (Same function as CTRL-DISP3)
500ms
Wait for 500ms
Error 2 [Protection]
Wait for 100ms Time out = 2000ms
No
Is Power Down = HIGH?
Yes
100ms
Wait for 100ms
M16C RST_H to LOW RST_HDMI = HIGH RST_AUD = HIGH RESET_n = HIGH
Enable Power Down INT Enable DC_PROT INT
Error 7
Initialise Tuner
Error 8
Initialise IF Demodulator, Afric TDA9886T
Error 9
Initialise Micronas Mute Audio
Error 11
Initialise HDMI, Sil9023
1700ms
Initialise Trident CX BL_ADJ = HIGH (100% Duty Cycle) DPTVInit( )
Error 3 [Protection]
Initialise FHP Panel * For FHP PDP Sets only
Initialise Bolt-ON * For iTV, 1080P, Ambi Light
Enable RC Key
DVB recording mode
Yes
No
For DVB Sets only (Semistandby) Recording mode
SDI PDP => CTRL_DISP1 = HIGH
Recording Mode finished
Software Shutdown:
WP for NVM
Port Assignment in STANDBY
STANDBYn = LOW
Standby Normal Mode
User wake up the sets in DVB recording mode
LCD_PWR_ON = HIGH (Same function as CTRL-DISP2) SDI PDP => CTRL_DISP1 = LOW
20ms
Wait for 20 ms
Switch ON LVDS Signal
1000ms to 1500ms
Init. Warm Component (For software)
For LCD: BL_ON_OFF = HIGH * BL_ADJ keep 100% for 3000ms before dimming.
For PDP: 3000ms delay
Blank Picture Picture Mode Setup & Detection
unBlank Picture & UnMute Audio
End
Error 5 - Trident [Protection]
Error 10 – SDRAM 7204 [Protection]
Error 14 – SDRAM 7205 [Protection]
Error 17 – AmbiLight
Error 18 – iTV iFace
Error 19 – 1080P

Notes:
---
1. LC07 TV software only start communication with IBOZ once receive the INT message from IBOZ.

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Figure 5-7 Start-up flowchart

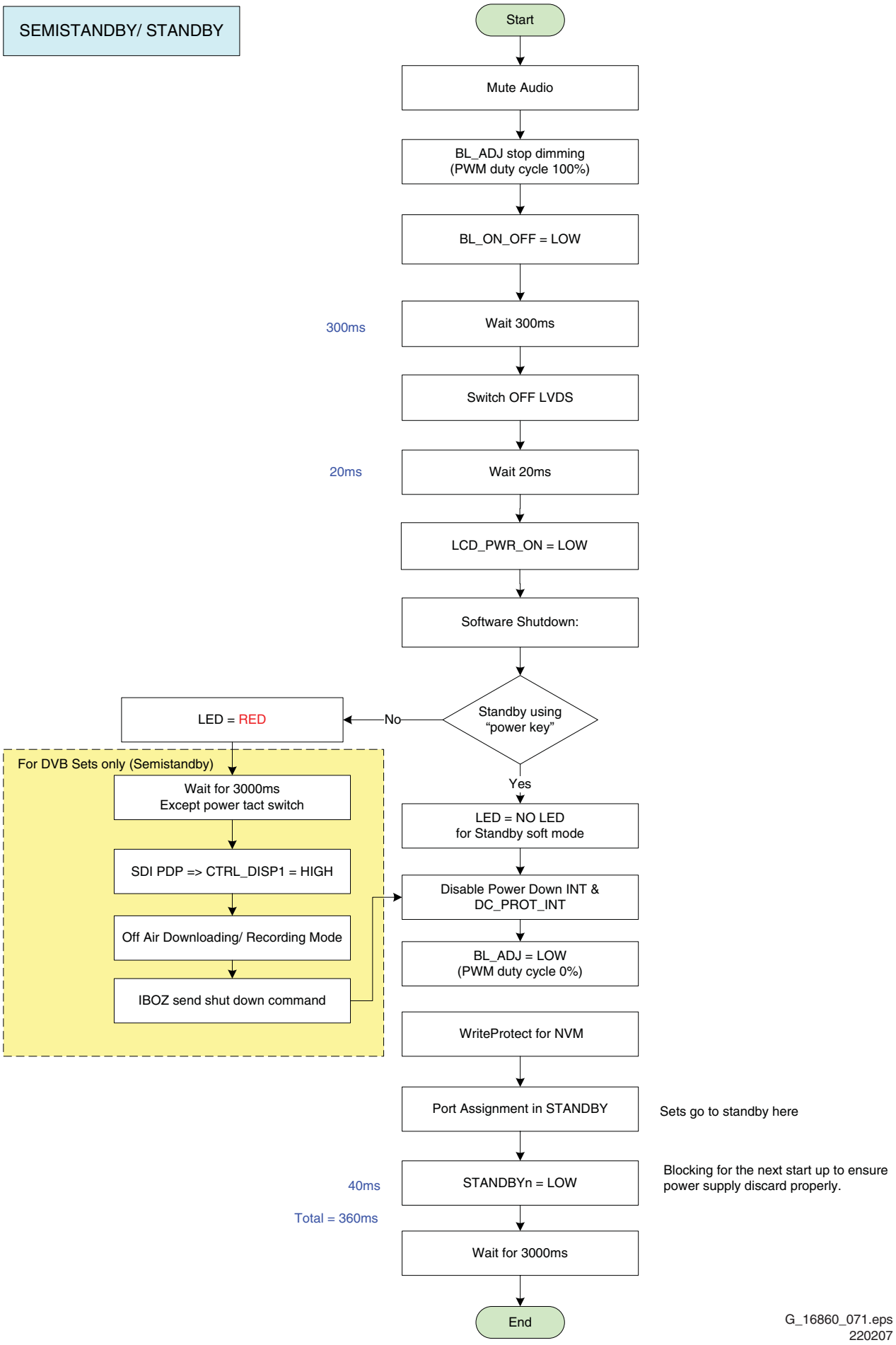
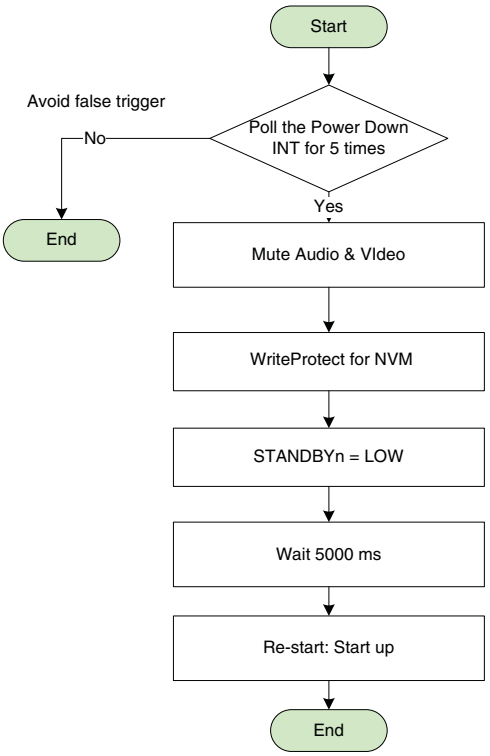


Figure 5-8 Semi Stand-by/Stand-by flowchart

Power Down INT:
AC OFF or Transient INT



Notes:
1. Power Down INT will be based on fall edge triggering
2. +3V3STBY will stay for 15ms, software must perform WriteProtect for NVM within 15ms.

DC_PROT INT

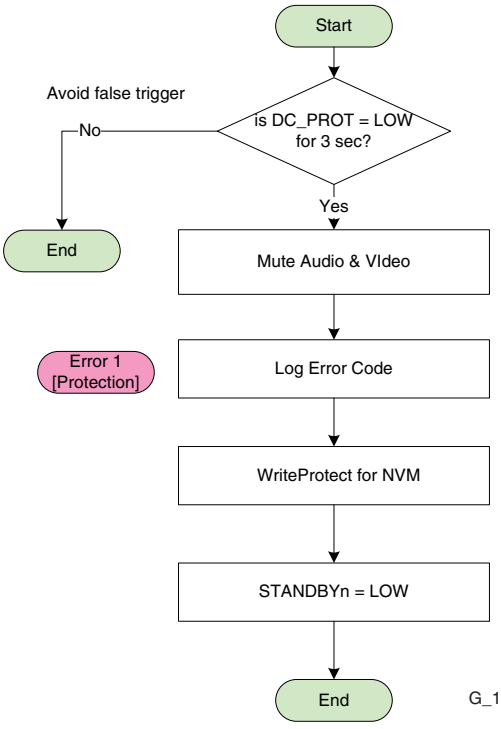


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Figure 5-9 Power Down & DC_PROT flowchart

Personal Notes:

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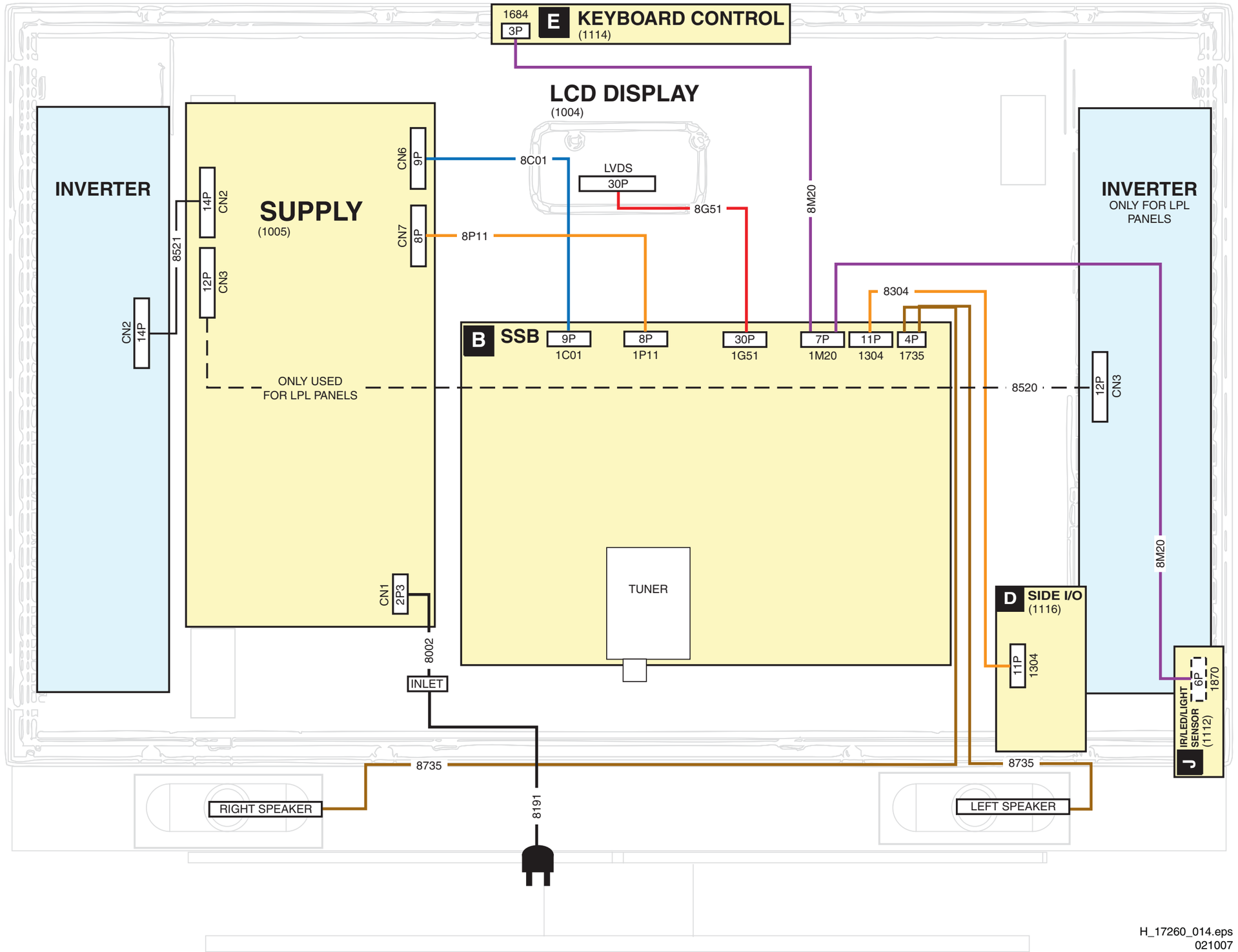
6. Block Diagrams, Test Point Overview, and Waveforms

Wiring Diagram 26” (ME5P)

WIRING 26” (STYLING ME5P)



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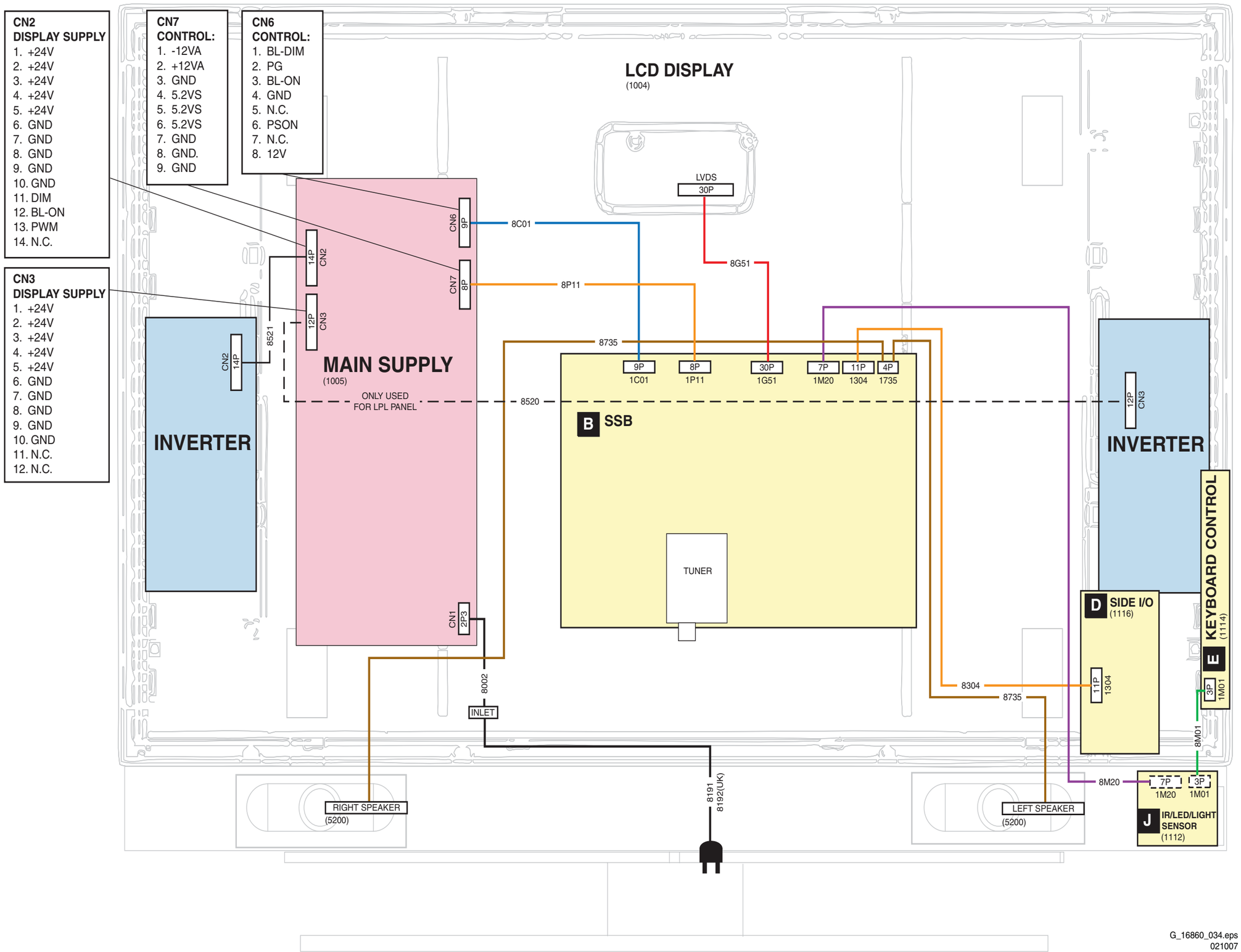
Wiring Diagram 26” - 32” (ME7)

WIRING 26”- 32” LCD (STYLING ME7)



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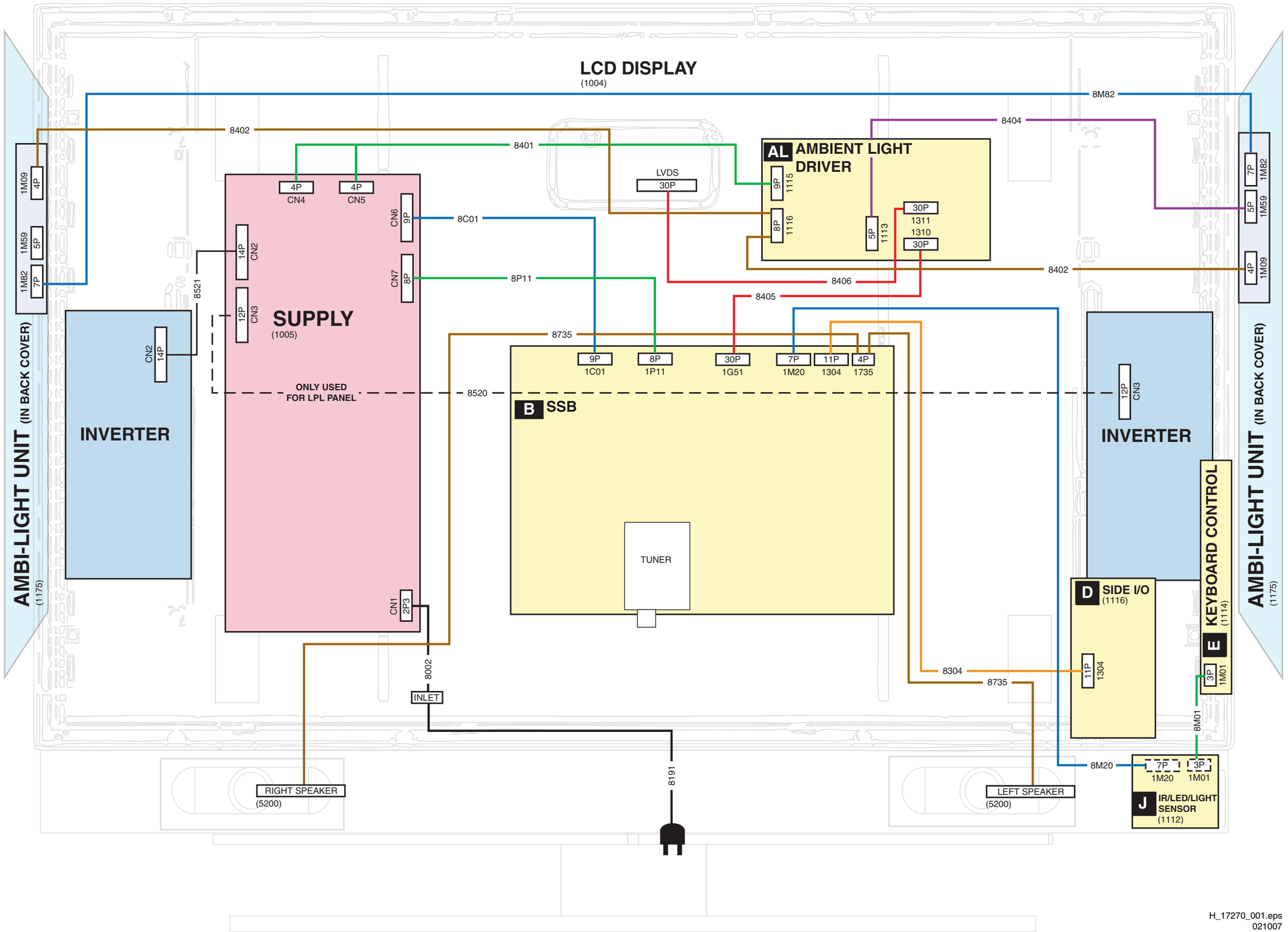
Wiring Diagram LCD with AmbiLight (ME7)

WIRING 32" LCD WITH AMBI-LIGHT (STYLING ME7)



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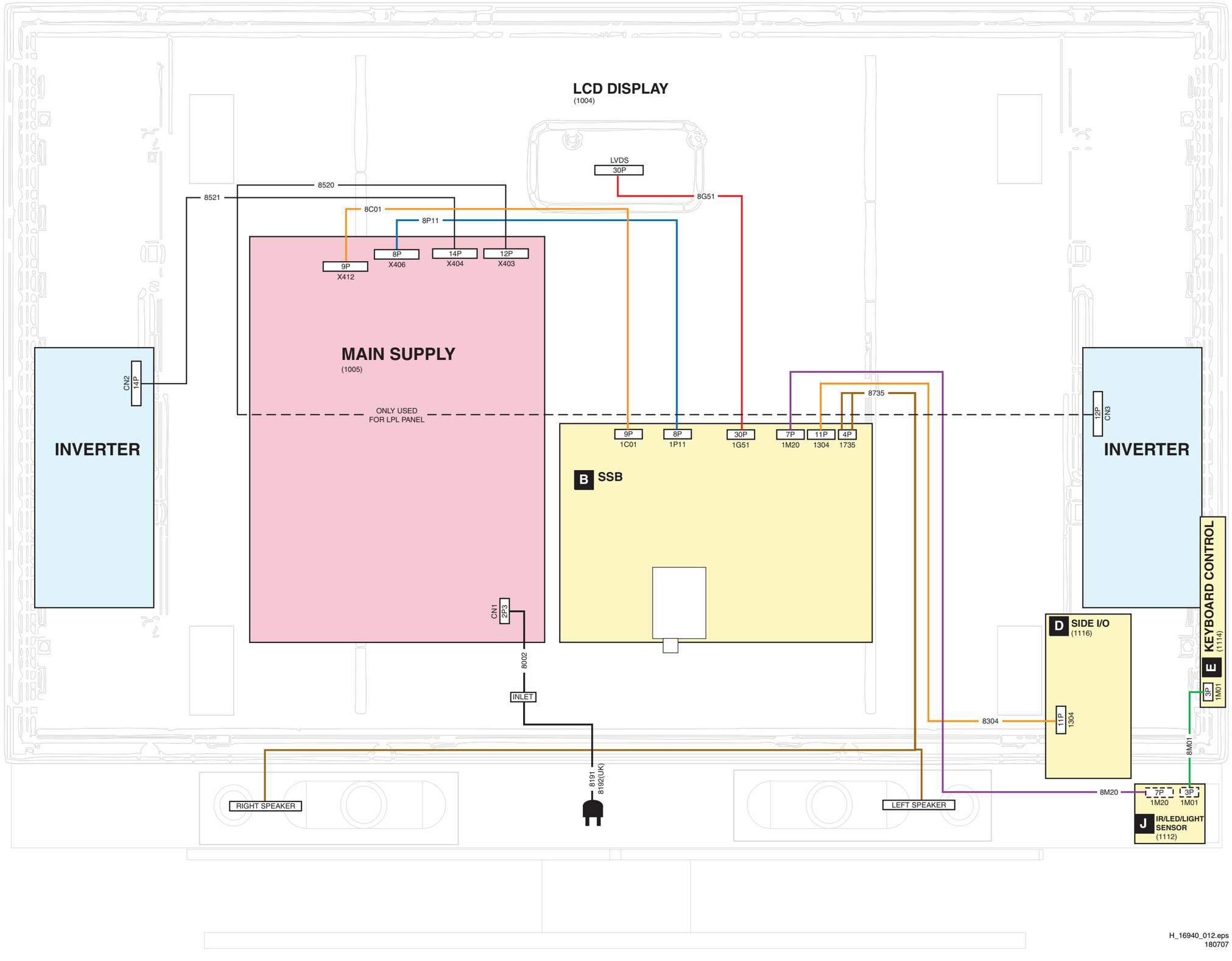
Wiring Diagram 37” - 42” LCD (ME7)

WIRING 37”- 42” LCD (STYLING ME7)



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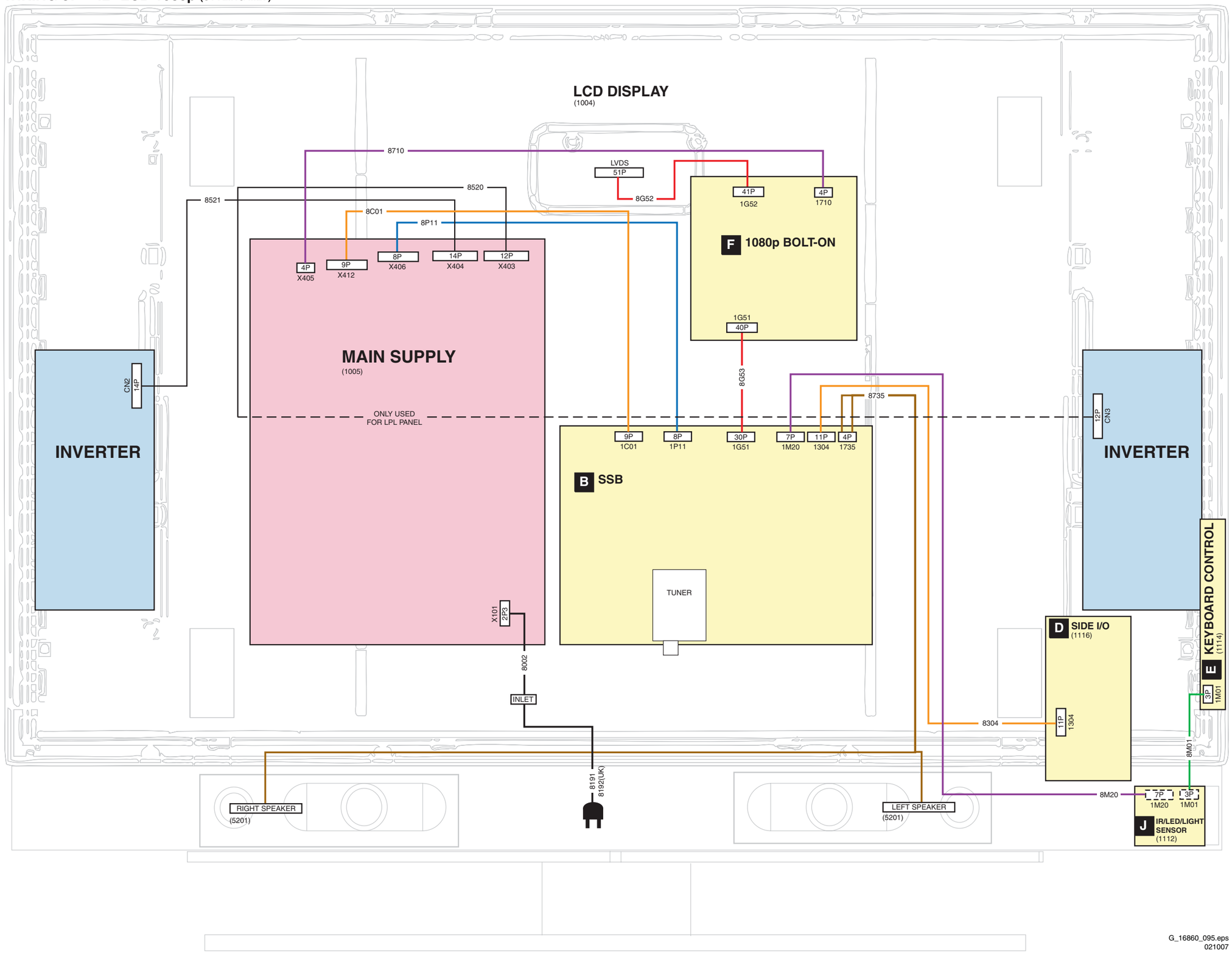
Wiring Diagram 37” - 42” LCD with 1080p (ME7)

WIRING 37”- 42” LCD 1080p (STYLING ME7)



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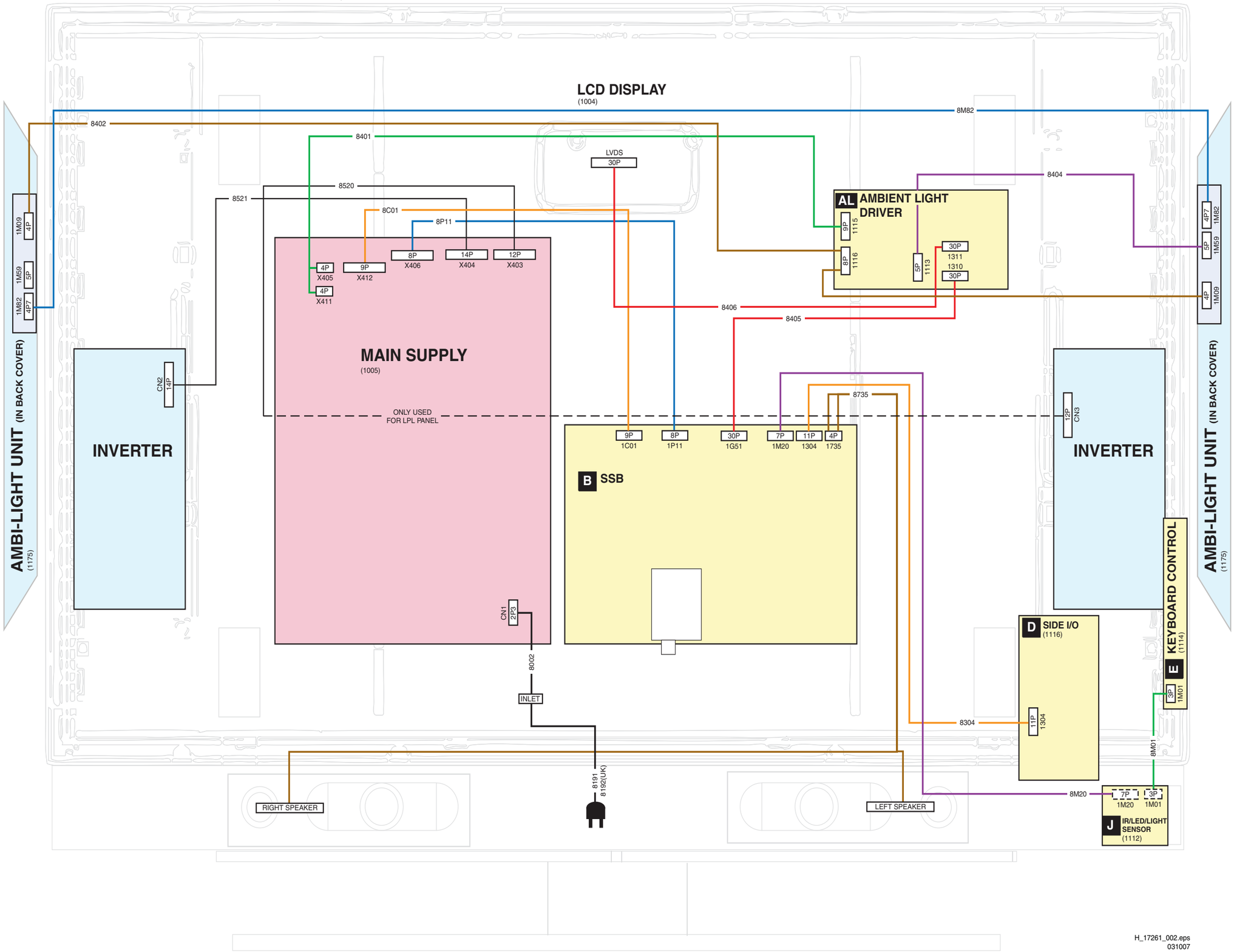
021007

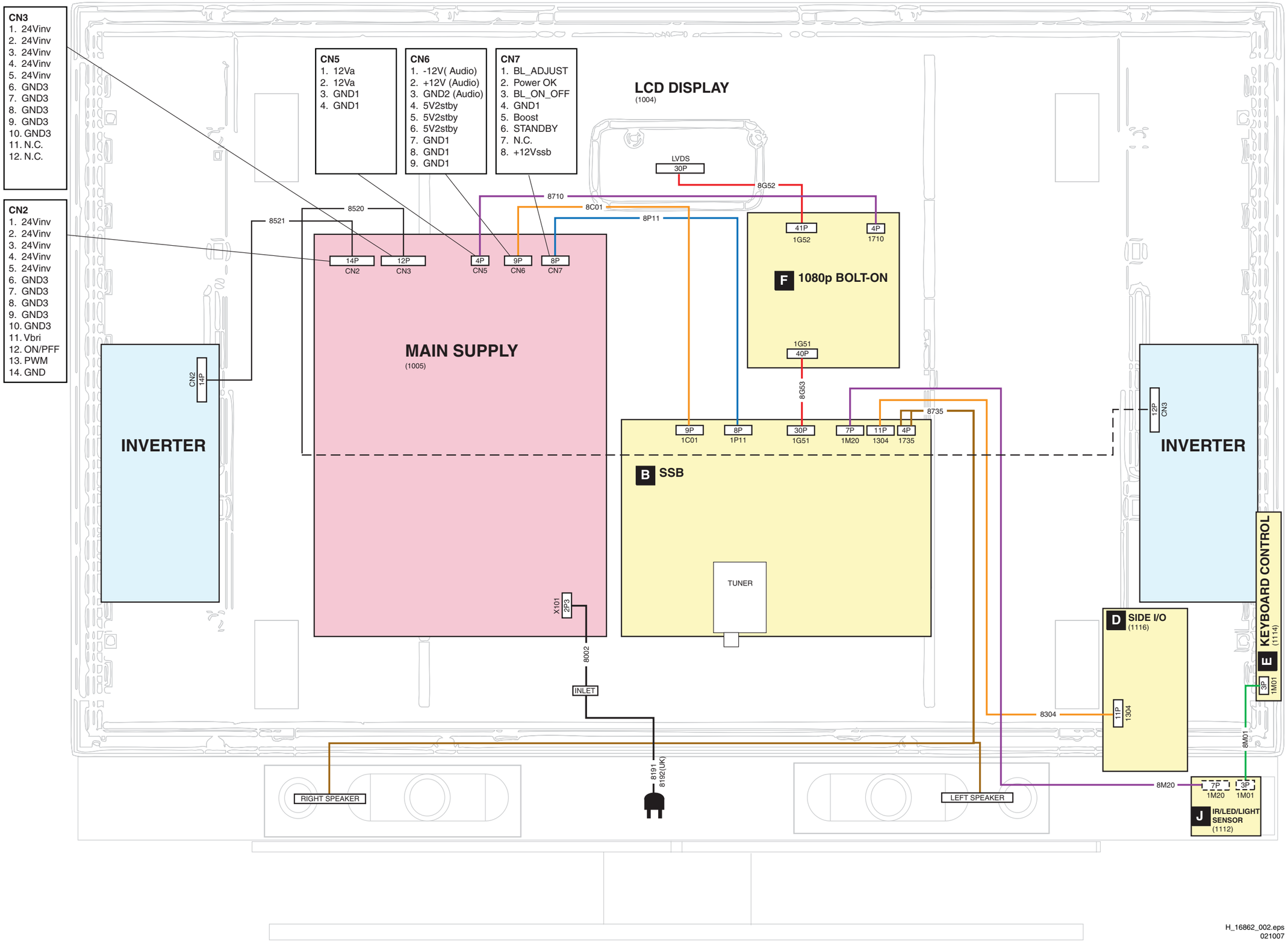
Wiring Diagram 42” LCD with AmbiLight (ME7)

WIRING 42” LCD WITH AMBI-LIGHT (STYLING ME7)



Wiring Diagram 47” - 52” LCD with 1080p (ME7)

WIRING 47”- 52” LCD 1080p (STYLING ME7)



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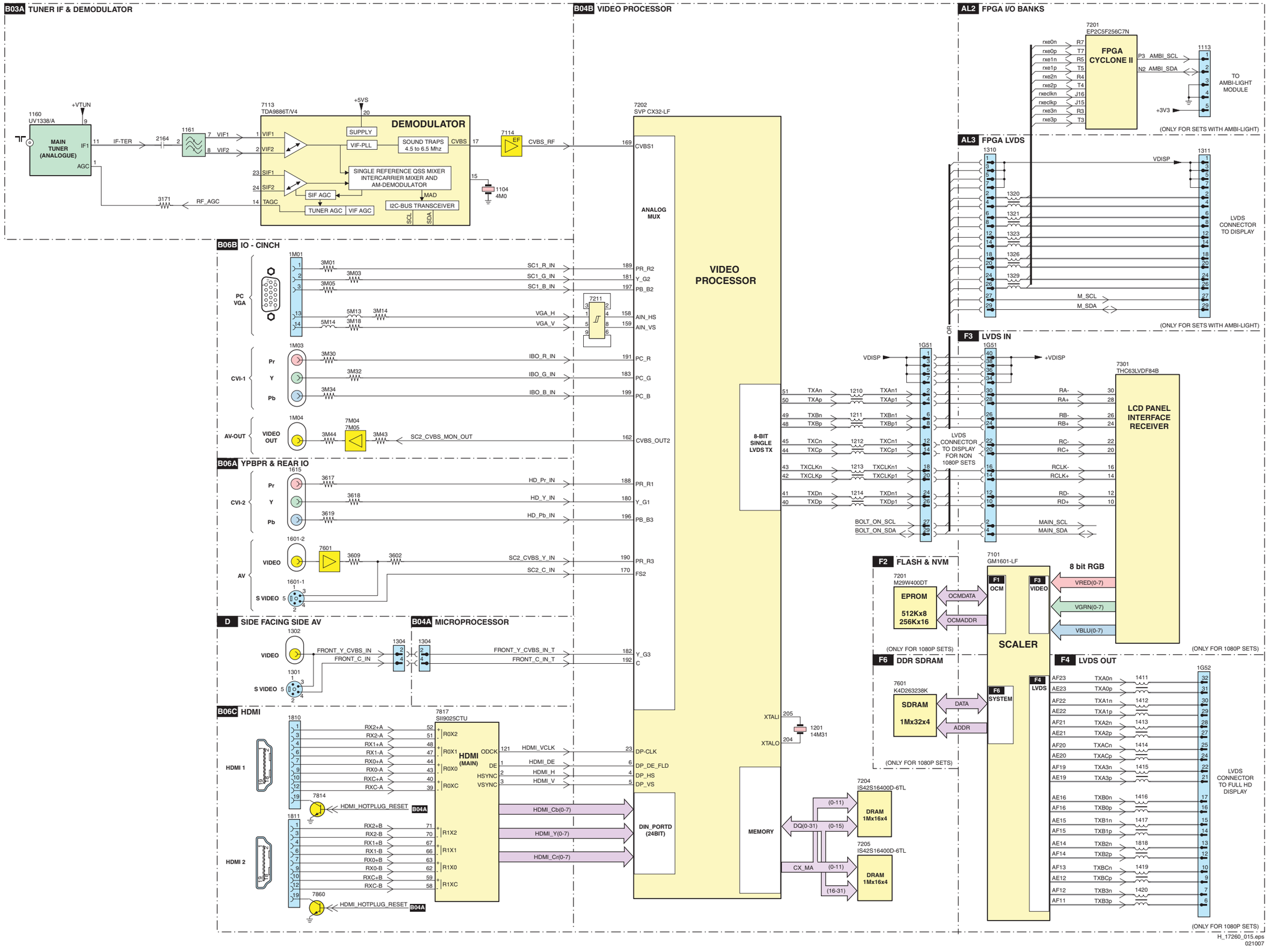
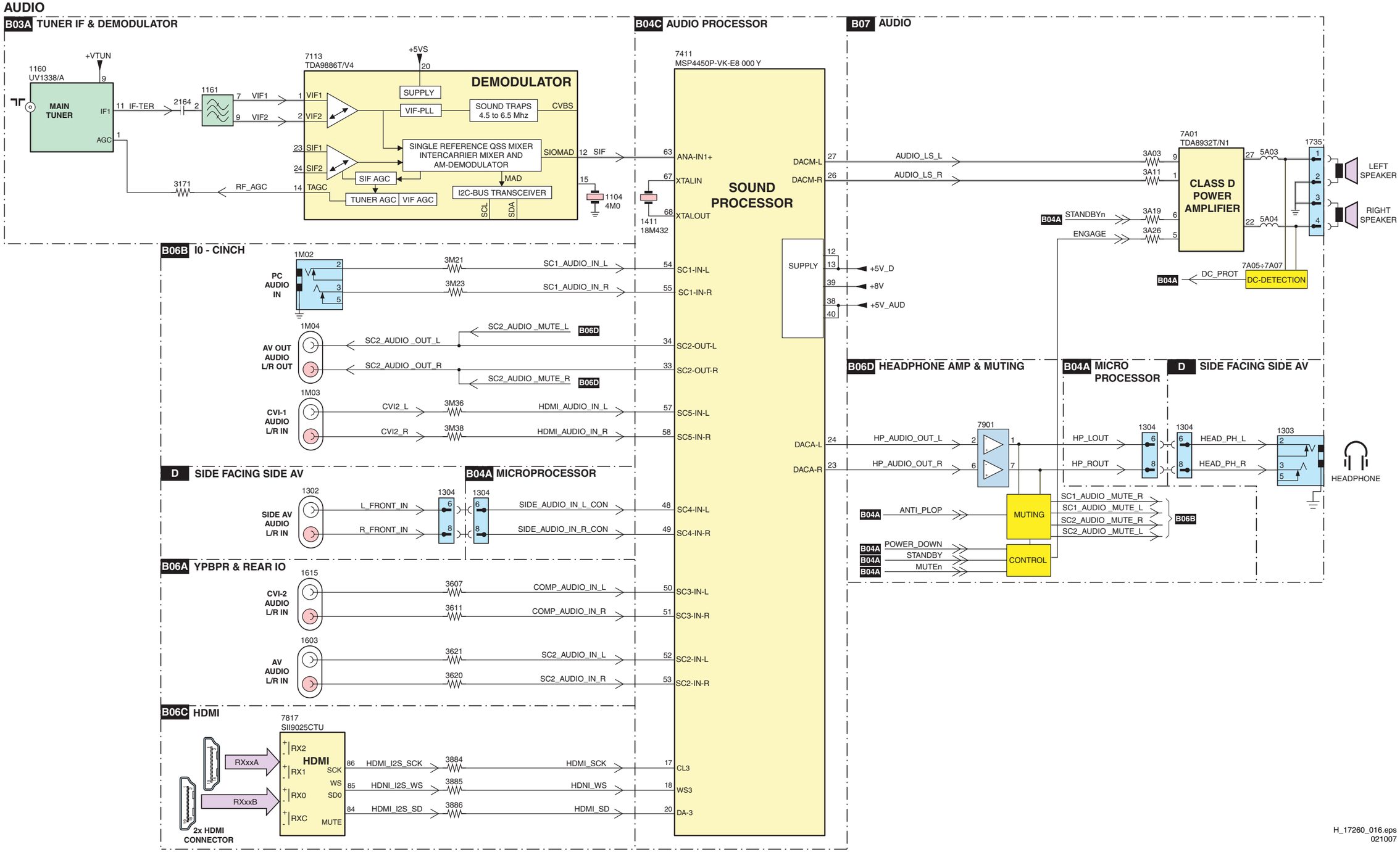
Block Diagram Video

VIDEO



Block Diagram Audio

AUDIO



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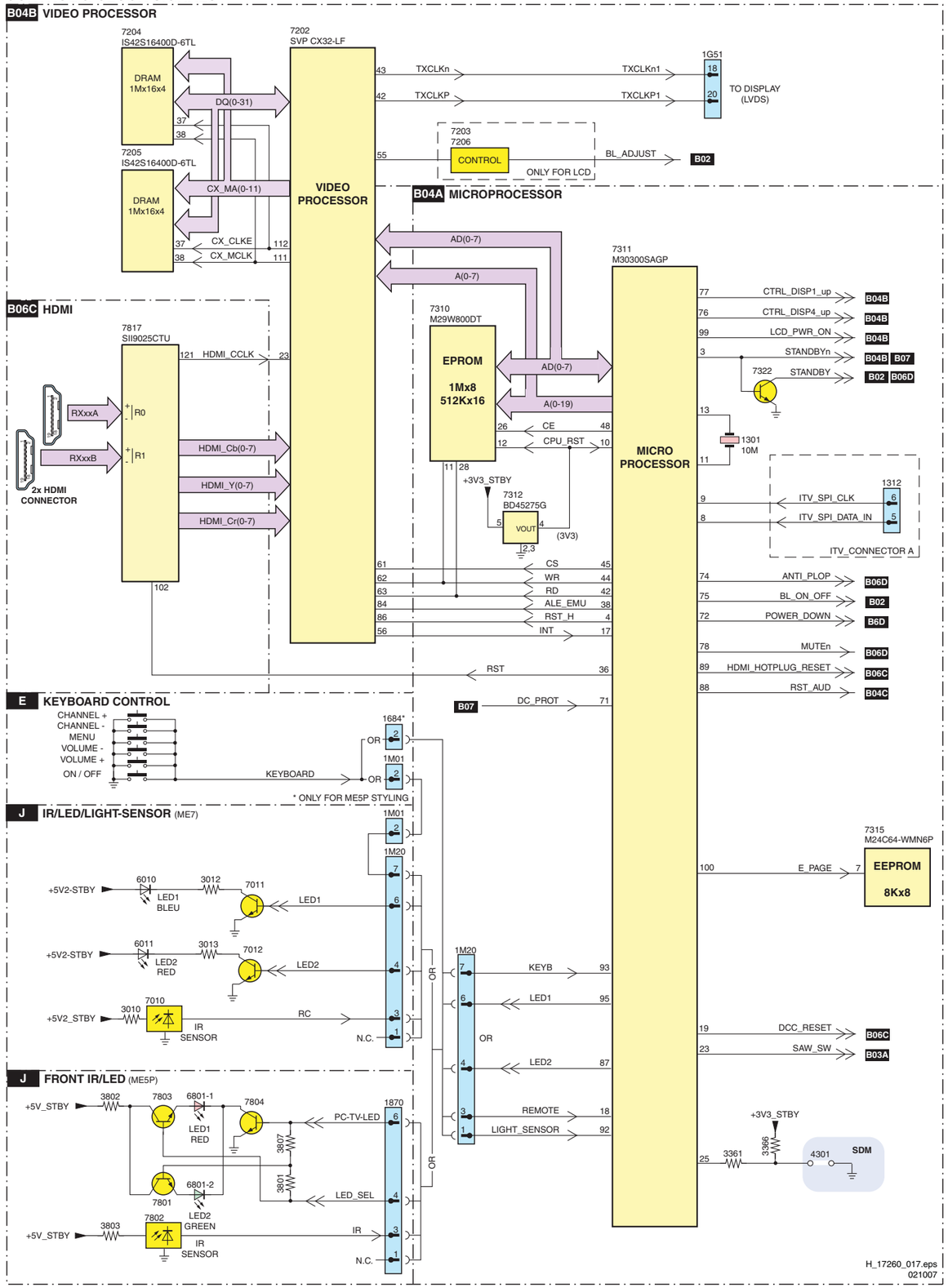
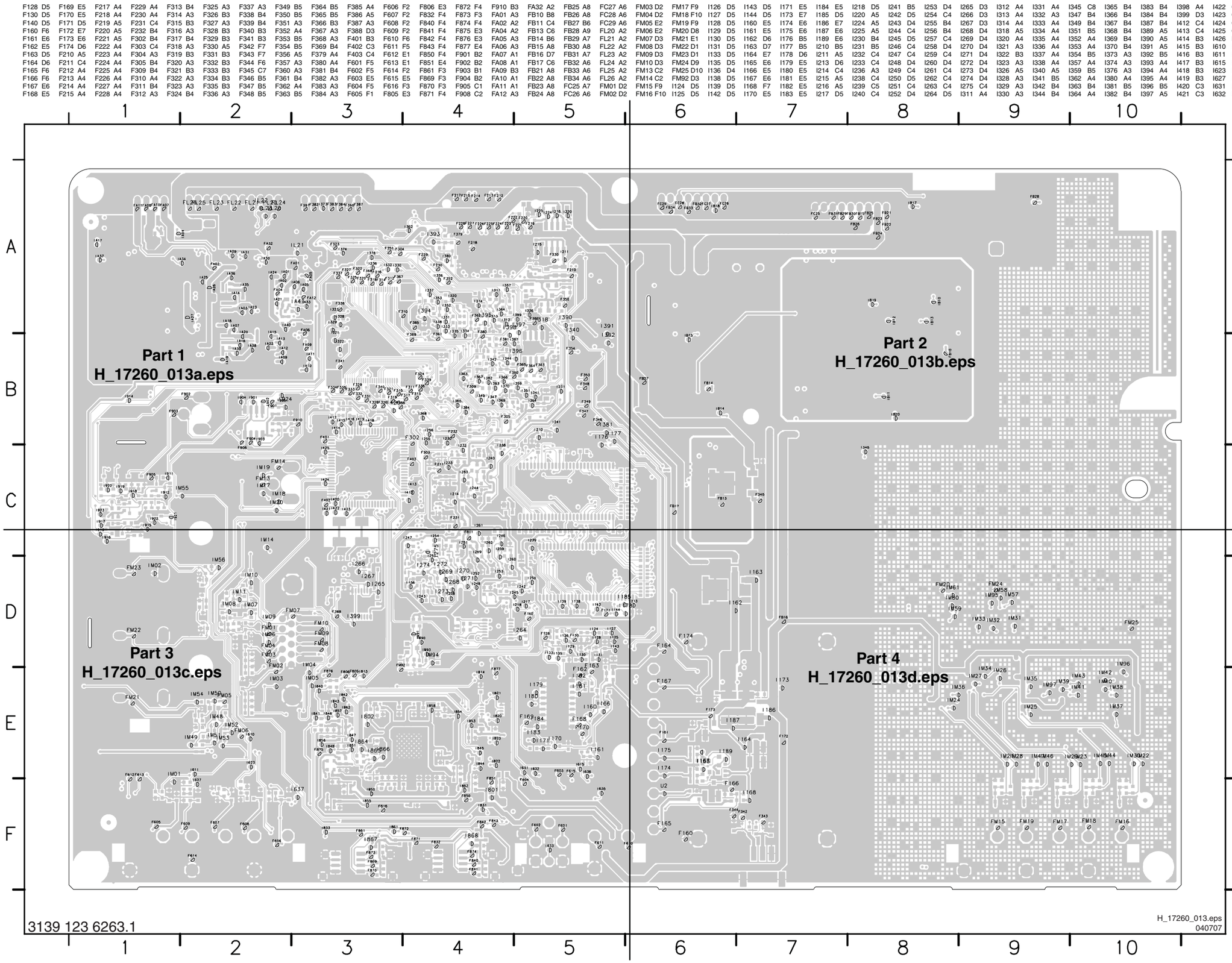
021007

Block Diagram Control & Clock Signals

CONTROL & CLOCK SIGNALS



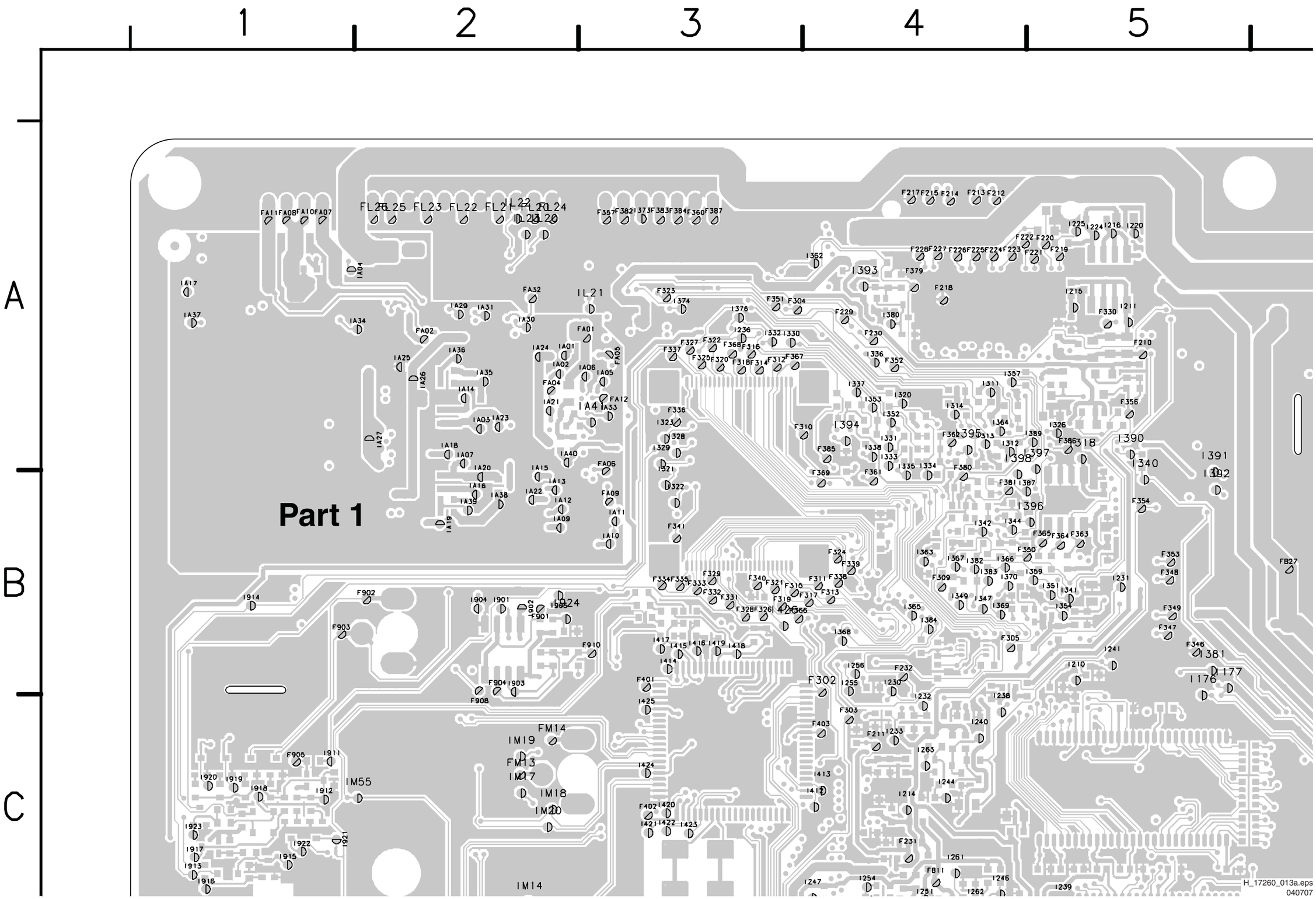
Test Point Overview SSB (Overview Bot. Side)



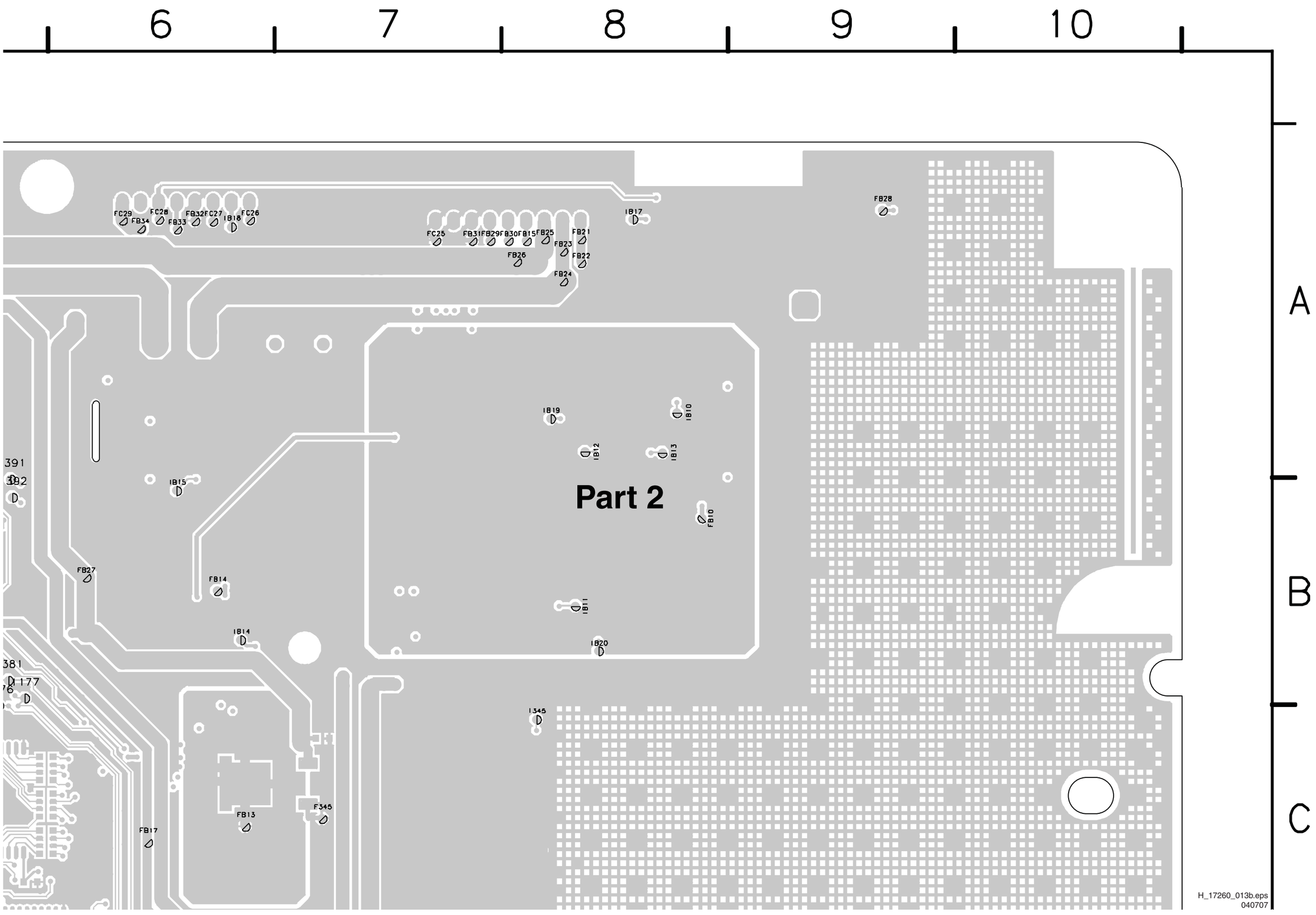
F128 D5 F169 E5 F217 A4 F229 A4 F313 B4 F325 A3 F337 A3 F349 B5 F364 B5 F385 A4 F606 F2 F806 E3 F872 F4 F910 B3 FA32 A2 FB25 A8 FC27 A6 FM03 D2 FM17 F9 I126 D5 I143 D5 I171 E5 I184 E5 I218 D5 I241 B5 I253 D4 I265 D3 I312 A4 I331 A4 I345 C8 I365 B4 I383 B4 I398 A4 I422 C3 I633 F5 IM08 D2
F130 D5 F170 E5 F218 A4 F230 A4 F314 A3 F326 B3 F338 B4 F350 B5 F365 B5 F386 A5 F607 F2 F832 F4 F873 F3 FA01 A3 FB10 B8 FB26 A8 FC28 A6 FM04 D2 FM18 F10 I127 D5 I144 D5 I173 E7 I185 D5 I220 A5 I242 D5 I254 C4 I266 D3 I313 A4 I332 A3 I347 B4 I366 B4 I384 B4 I399 D3 I423 C3 I635 F5 IM09 D2
F140 D5 F171 D5 F219 A5 F231 C4 F315 B3 F327 A3 F339 B4 F351 A3 F366 B3 F387 A3 F608 F2 F840 F4 F874 F4 FA02 A2 FB11 C4 FB27 B6 FC29 A6 FM05 E2 FM19 F9 I128 D5 I160 E5 I174 E6 I186 E7 I224 A5 I243 D4 I255 B4 I267 D3 I314 A4 I333 A4 I349 B4 I367 B4 I387 B4 I412 C4 I424 C3 I636 E5 IM10 D2
F160 F6 F172 E7 F220 A5 F232 B4 F316 A3 F328 B3 F340 B3 F352 A4 F367 A3 F388 D3 F609 F2 F841 F4 F875 E3 FA04 A2 FB13 C6 FB28 A9 FL20 A2 FM06 E2 FM20 D8 I129 D5 I161 E5 I175 E6 I187 E6 I225 A5 I244 C4 I256 B4 I268 D4 I318 A5 I334 A4 I351 B5 I368 B4 I389 A5 I413 C4 I425 C3 I637 F3 IM11 D2
F161 E6 F173 E6 F221 A5 F302 B4 F317 B4 F329 B3 F341 B3 F353 B5 F368 A3 F401 B3 F610 F6 F842 F4 F876 E3 FA05 A3 FB14 B6 FB29 A7 FL21 A2 FM07 D3 FM21 E1 I130 D5 I162 D6 I176 B5 I189 E6 I230 B4 I245 D5 I257 C4 I269 D4 I320 A4 I335 A4 I352 A4 I369 B4 I390 A5 I414 B3 I426 B3 I801 F4 IM14 C2
F162 E5 F174 D6 F222 A4 F303 C4 F318 A3 F330 A5 F342 F7 F354 B5 F369 B4 F402 C3 F611 F5 F843 F4 F877 E4 FA06 A3 FB15 A8 FB30 A8 FL22 A2 FM08 D3 FM22 D1 I131 D5 I163 D7 I177 B5 I210 B5 I231 B5 I246 C4 I258 D4 I270 D4 I321 A3 I336 A4 I353 A4 I370 B4 I391 A5 I415 B3 I610 E2 I802 E3 IM17 C2
F163 D5 F210 A5 F223 A4 F304 A3 F319 B3 F331 B3 F343 F7 F356 A5 F379 A4 F403 C4 F612 E1 F850 F4 F901 B2 FA07 A1 FB16 D7 FB31 A7 FL23 A2 FM09 D3 FM23 D1 I133 D5 I164 E7 I178 D6 I211 A5 I232 C4 I247 C4 I259 C4 I271 D4 I322 B3 I337 A4 I354 B5 I373 A3 I392 B5 I416 B3 I611 E2 I813 E3 IM18 C2
F164 D6 F211 C4 F224 A4 F305 B4 F320 A3 F332 B3 F344 F6 F357 A3 F380 A4 F601 F5 F613 E1 F851 E4 F902 B2 FA08 A1 FB17 C6 FB32 A6 FL24 A2 FM10 D3 FM24 D9 I135 D5 I165 E6 I179 E5 I213 D6 I233 C4 I248 D4 I260 D4 I272 D4 I323 A3 I338 A4 I357 A4 I374 A3 I393 A4 I417 B3 I615 E5 I814 E4 IM19 C2
F165 F6 F212 A4 F225 A4 F309 B4 F321 B3 F333 B3 F345 C7 F360 A3 F381 B4 F602 F5 F614 F2 F861 F3 F903 B1 FA09 B3 FB21 A8 FB33 A6 FL25 A2 FM13 C2 FM25 D10 I136 D4 I166 E5 I180 E5 I214 C4 I236 A3 I249 C4 I261 C4 I273 D4 I326 A5 I340 A5 I359 B5 I376 A3 I394 A4 I418 B3 I623 E2 I820 E4 IM20 C2
F166 F6 F213 A4 F226 A4 F310 A4 F322 A3 F334 B3 F346 B5 F361 B4 F382 A3 F603 E5 F615 E5 F869 F3 F904 B2 FA10 A1 FB22 A8 FB34 A6 FL26 A2 FM14 C2 FM92 D3 I138 D5 I167 E6 I181 E5 I215 A5 I238 C4 I250 D5 I262 C4 I274 D4 I328 A3 I341 B5 I362 A4 I380 A4 I395 A4 I419 B3 I627 F2 I821 E4 IM21 E9
F167 E6 F214 A4 F227 A4 F311 B4 F323 A3 F335 B3 F347 B5 F362 A4 F383 A3 F604 F5 F616 F3 F870 F3 F905 C1 FA11 A1 FB23 A8 FC25 A7 FM01 D2 FM15 F9 I124 D5 I139 D5 I168 F7 I182 E5 I216 A5 I239 C5 I251 C4 I263 C4 I275 C4 I329 A3 I342 B4 I363 B4 I381 B5 I396 B5 I420 C3 I631 E5 I822 E4 IM22 E10
F168 E5 F215 A4 F228 A4 F312 A3 F324 B4 F336 A3 F348 B5 F363 B5 F384 A3 F605 F1 F805 E3 F871 F4 F908 C2 FA12 A3 FB24 A8 FC26 A6 FM02 D2 FM16 F10 I125 D5 I142 D5 I170 E5 I183 E5 I217 D5 I240 C4 I252 D4 I264 D5 I311 A4 I330 A3 I344 B4 I364 A4 I382 B4 I397 A5 I421 C3 I632 E5 I823 E4 IM23 E10

I831 F4 IM24 E8
I833 F3 IM25 E9
I840 E3 IM26 E9
I841 E3 IM27 E9
I842 E3 IM28 E9
I843 E3 IM29 E10
I844 E4 IM30 E10
I845 E4 IM31 D9
I846 E3 IM32 D9
I847 E3 IM33 D9
I848 E3 IM34 E9
I850 F3 IM35 E9
I851 E3 IM36 E8
I852 F4 IM37 E10
I853 E4 IM38 E10
I854 E4 IM39 E9
I855 F3 IM40 E10
I856 E3 IM41 E10
I857 E3 IM42 E10
I858 E4 IM43 E10
I861 F3 IM44 E10
I862 E3 IM45 E10
I864 E3 IM46 E9
I865 E3 IM47 E9
I866 E3 IM48 E2
I867 F3 IM49 E2
I868 F4 IM50 E2
I901 B2 IM51 E2
I902 B2 IM52 E2
I903 B2 IM53 E2
I904 B2 IM54 E2
I905 B2 IM55 C2
I911 C1 IM56 D2
I912 C1 IM57 D9
I913 C1 IM58 D9
I914 B1 IM59 D8
I915 C1 IM60 D8
I916 C1 IM61 D8
I917 C1 IM90 D4
I918 C1 IM91 D4
I919 C1 IM93 D4
I920 C1 IM94 D4
I921 C1 IM95 D9
I922 C1 IM96 D10
I923 C1 IM97 E9
I924 B2 U2 F6
IA01 A2
IA02 A2
IA03 A2
IA04 A2
IA05 A3
IA06 A3
IA07 A2
IA09 B2
IA10 B3
IA11 B3
IA12 B2
IA13 B2
IA14 A2
IA15 A2
IA16 B2
IA17 A1
IA18 A2
IA19 B2
IA20 A2
IA21 A2
IA22 B2
IA23 A2
IA24 A2
IA25 A2
IA26 A2
IA27 A2
IA29 A2
IA30 A2
IA31 A2
IA33 A3
IA34 A2
IA35 A2
IA36 A2
IA37 A1
IA38 B2
IA39 B2
IA40 A2
IA41 A3
IB10 A8
IB11 B8
IB12 A8
IB13 A8
IB14 B6
IB15 B6
IB17 A8
IB18 A6
IB19 A8
IB20 B8
IL20 A2
IL21 A3
IL22 A2
IL23 A2
IM01 E1
IM02 D1
IM03 E2
IM04 D3
IM05 E3
IM06 D2
IM07 D2

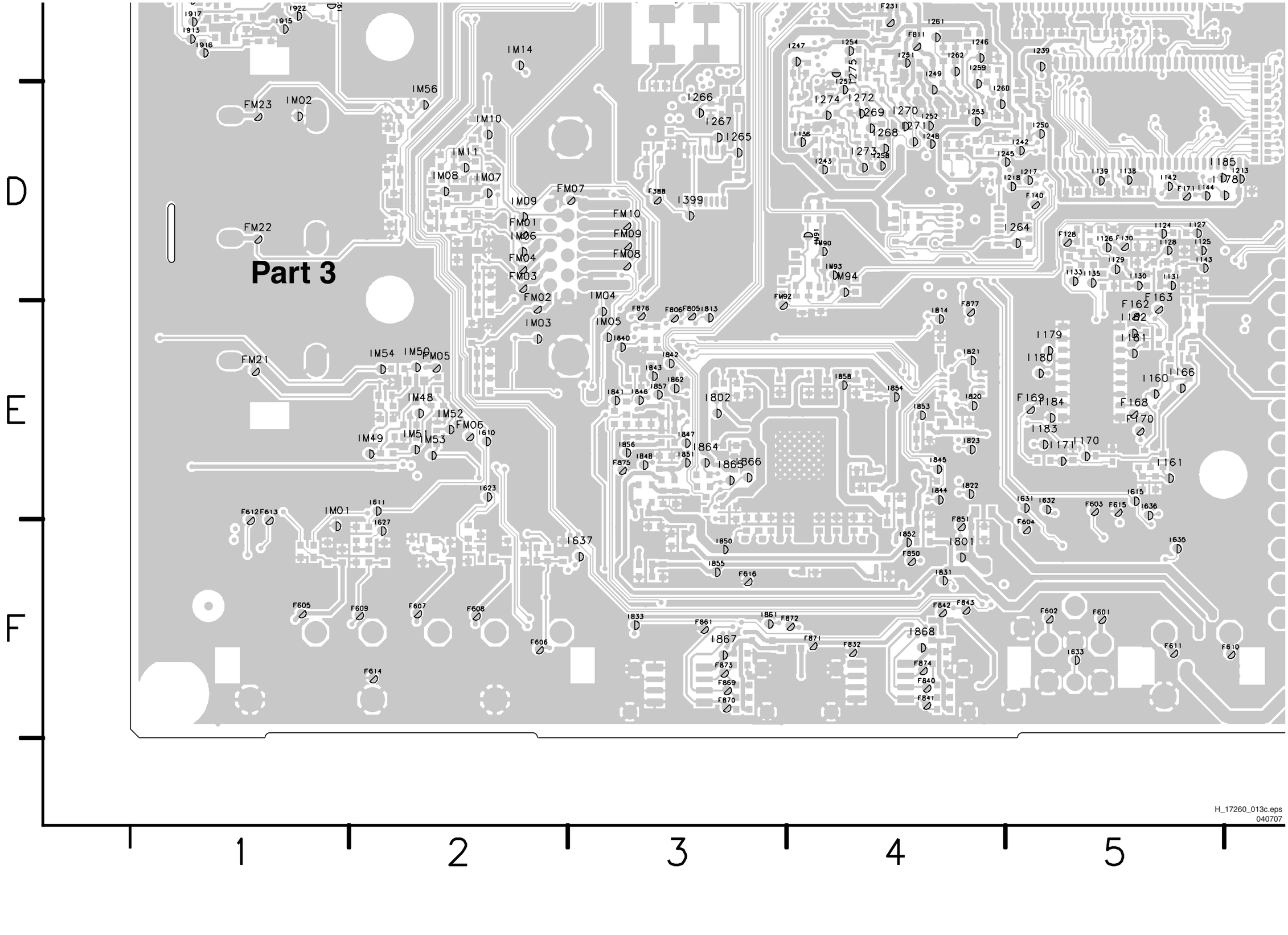
Test Point Overview SSB (Part 1 Bottom Side)



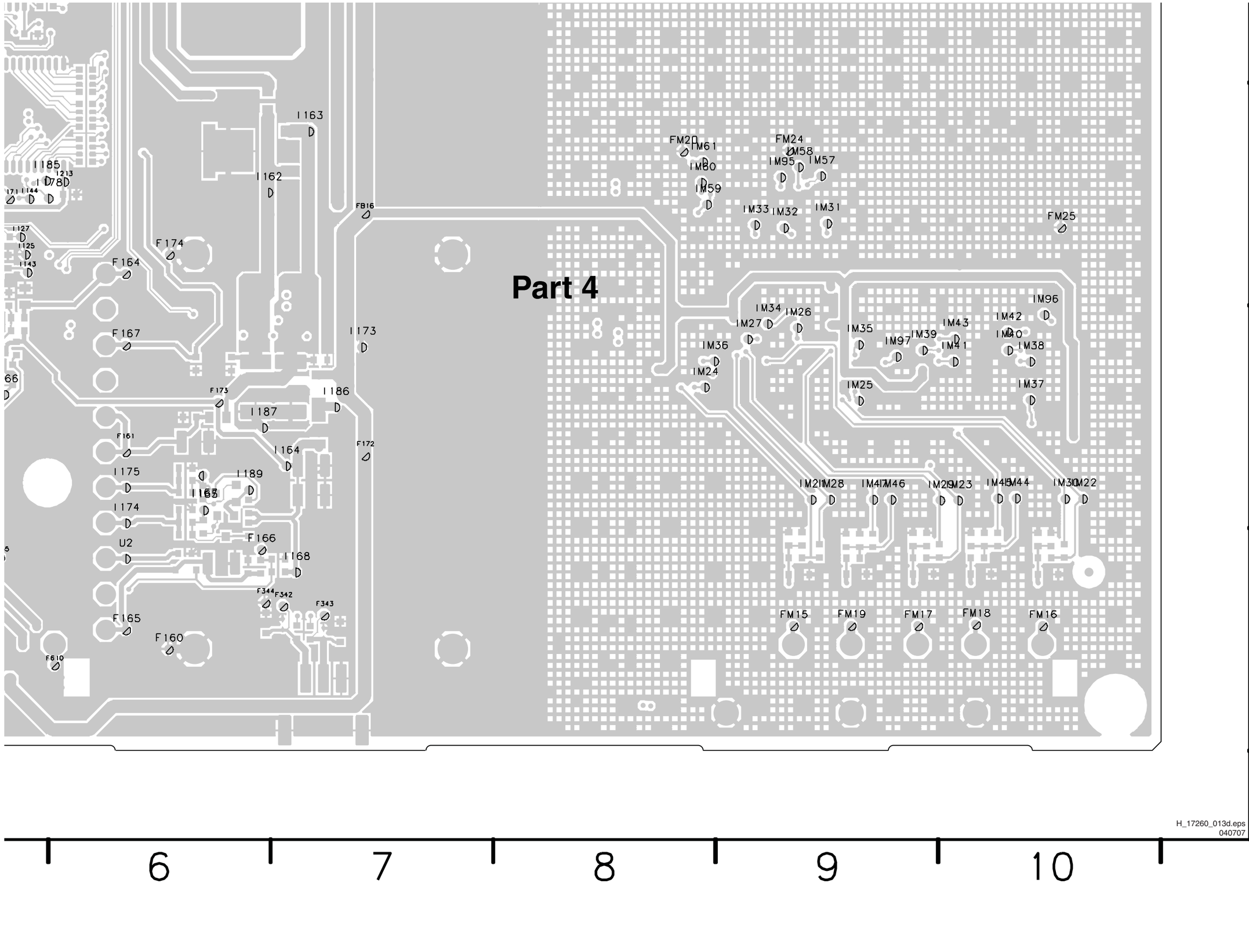
Test Point Overview SSB (Part 2 Bottom Side)



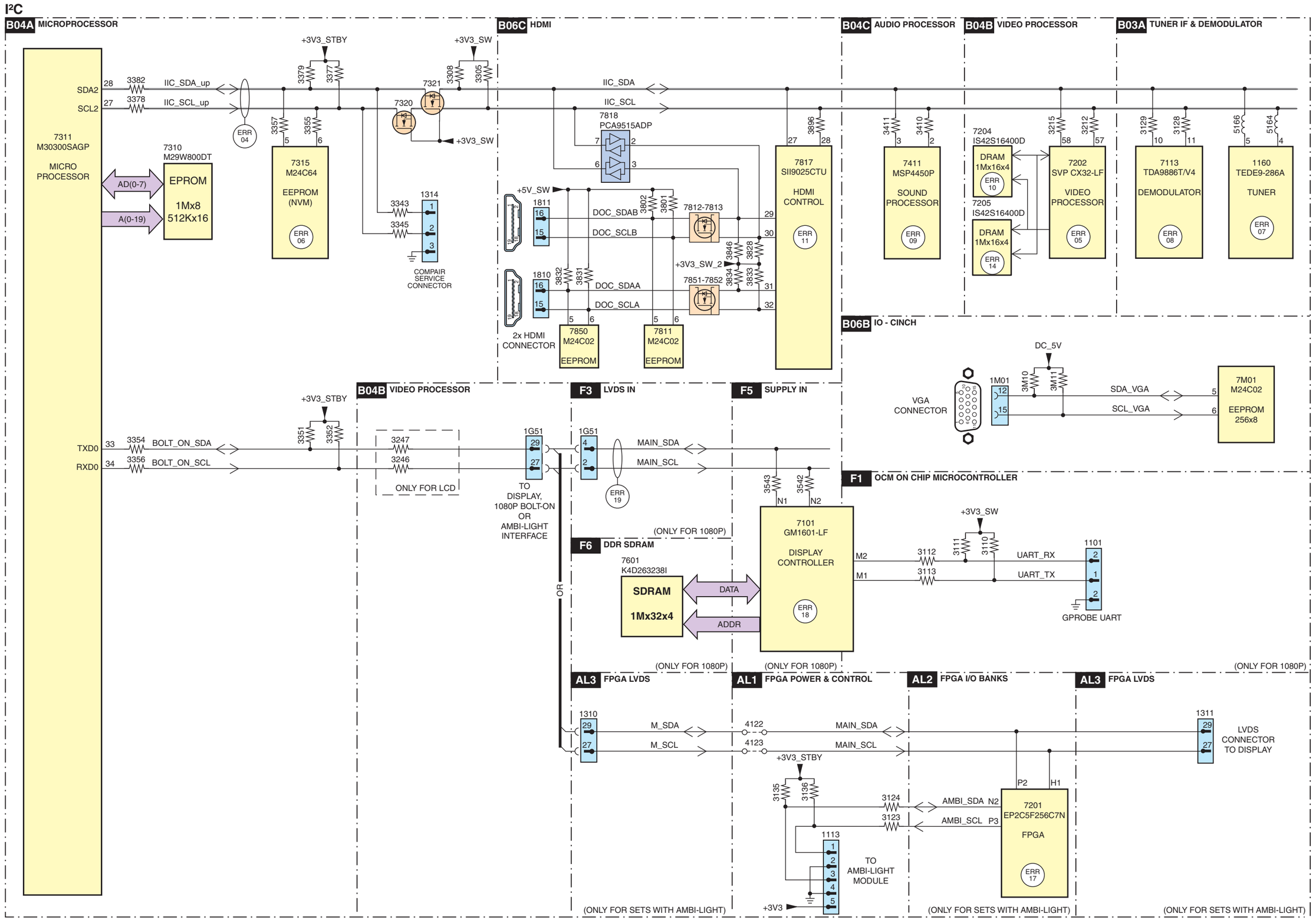
Test Point Overview SSB (Part 3 Bottom Side)



Test Point Overview SSB (Part 4 Bottom Side)



I2C IC's Overview



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Supply Lines Overview

SUPPLY LINES OVERVIEW

SUPPLY

B02 DC-DC

CN6 X406 1P11: +5V_STANDBY, +12V_DISP → B04a,b,c
CN7 X412 1CO1: -AUDIO_POWER → B07; +AUDIO_POWER → B07; +5V_STANDBY → B04a; +3V_STBY → B04a,B06d; +5V_SW → B03a,B04c,B06a,b,c,d
7B02 IN OUT COM; 7B05; B04A STANDBY
7B04 IN OUT COM: +3V_SW → B03a,B04a,b,B06c
5B01 5B06 6B03 +VTUN (34V) → B03a
7B03; 3B13
7B01 STEP DOWN REG.; 5B03 5B02 +1V8S_SW → B04b
CN4 X411; CN5 X405: TO 1115 AL1 AMBI-LIGHT OR TO 1710 F7 1080p

B03A TUNER IF & DEMODULATOR

B02 +3V3_SW → +3V3_SW; 5159 → +3V3_SW_1 → B06C
B02 +5V_SW → +5V_SW; 3133 5114 +5VS; 3134 5115 +5V_IF
B02 +VTUN → +VTUN (ONLY FOR ANALOG TV)
B02 +12V_DISP → +12V_DISP

B04A MICROPROCESSOR

B02 +5V_STANDBY → +5V_STANDBY; 3L10 5304 1M20 5 J IR/LED
B02 +3V3_STBY → +3V3_STBY
B02 +3V3_SW → +3V3_SW
B02 +12V_DISP → +12V_DISP

B04B VIDEO PROCESSOR

B02 +1V8S_SW → +1V8S_SW
3244 CX_PAVDD1; 3248 CX_PAVDD2; 5224 CX_PDVDD; 5226 CX_PAVDD; 5220 CX_AVDD_ADC1; 5222 CX_AVDD_ADC2; 5225 CX_AVDD_ADC3; 5227 CX_AVDD_ADC4
B02 +3V3_SW → +3V3_SW
5219 CX_AVDD3_BG_ASS; 5223 CX_AVDD3_OUTBUF; 5218 CX_AVDD3_ADC1; 5221 CX_AVDD3_ADC2
B02 +12V_DISP → +12V_DISP
7210; 5215 VDISP; 5217; 1G51 1 OR; 7208 CONTROL; LCD_PWR_ON B04A; ONLY FOR LCD

B04C AUDIO PROCESSOR

B02 +12V_DISP → +12V_DISP
4401 +AUDIO_POWER_+12V_DISP; 7410 IN OUT COM +8V
B02 +5V_SW → +5V_SW
3402; 5401 +5V_D; 5402 +5V_AUD

B06A YPBPR & REAR IO

B02 +5V_SW → +5V_SW

B06B IO - CINCH

B02 +5V_SW → +5V_SW
VGA CONNECTOR 1M01 9 DC_5V

B06C HDMI

B02 +3V3_SW → +3V3_SW
B02 +5V_SW → +5V_SW
B02 +1V8S_SW → +1V8S_SW
B03a +3V3_SW_1 → +3V3_SW_1; 5801 +3V3_SW_2
HDMI CONNECTOR-1 1810 18 +5VHDMI_A
HDMI CONNECTOR-2 1811 18 +5VHDMI_B

B06D HEADPHONE AMP & MUTING

B02 +3V3_STBY → +3V3_STBY
B02 +5V_SW → +5V_SW

B07 AUDIO

B02 +AUDIO_POWER → +AUDIO_POWER
3A01; VDDA; 5A05 VDD; 5A07 4A01 RES +AUDIO_POWER_+12V_DISP
B02 -AUDIO_POWER → -AUDIO_POWER
3A02; VSSA; 5A06 VSS

AL1 FPGA POWER & CONTROL

1115 TO SUPPLY
+12V_BOLT-ON → AL4, F3; 5107 +12V → AL4; 7102 5111 +3V3 → AL2; 7103 L6910 STEP DOWN CONT. 11,14; 7101 IN OUT COM +2V5-PF → AL2; 7104 IN OUT COM +1V2 → AL2
1310 AL3 AMBI OR 1G51 F3 1080P
+3V3-FPGA → +3V3-FPGA; +15V → +15V; 1116 TO AMBI-L MODULE
(ONLY FOR SETS WITH AMBI-LIGHT)

AL2 FPGA I/O BANKS

AL1 +3V3 → +3V3; 5210 +3V3-FPGA
AL1 +2V5-PF → +2V5-PF; 5211 +2V5out-FPGA; 5212 +2V5IN-FPGA
AL1 +1V2 → +1V2; 5215 1V2-FPGA; 5214 +1V2-PLL
(ONLY FOR SETS WITH AMBI-LIGHT)

1G51 B04E SSB

AL3 FPGA LVDS

1310 +VDISP (ONLY FOR SETS WITH AMBI-LIGHT)

AL4 DC/DC (ONLY FOR 32")

AL1 +12V_BOLT-ON → +12V_BOLT-ON; 5502 12V; 5501 6501 +15V → AL1
7501 MC34063ADG STEP UP/DOWN REG.; 7502
(ONLY FOR SETS WITH AMBI-LIGHT)

F1 OCM ON CHIP MICROCONTROLLER

F7 +3V3_SW → +3V3_SW
(ONLY FOR 1080P)

F2 FLASH & NVM

F7 +3V3_IO → +3V3_IO
F7 +3V3_SW → +3V3_SW
(ONLY FOR 1080P)

F3 LVDS IN

F7 +3V3_LVDSA → +3V3_LVDSA
F7 +3V3_LVDSVCC → +3V3_LVDSVCC
F7 +3V3_LVDSD → +3V3_LVDSD
1G51 40 +VDISP → F4
(ONLY FOR 1080P)

F4 LVDS OUT

+VDISP → +VDISP; 1G52 41 TO DISPLAY
(ONLY FOR 1080P)

F5 SUPPLY IN

+1V8_CORE → +1V8_CORE
+1V8_DVI → +1V8_DVI
+1V8_ADC → +1V8_ADC
+3V3_IO → +3V3_IO
+3V3_ADC → +3V3_ADC
+3V3_SW → +3V3_SW
+3V3_PLL → +3V3_PLL
+3V3_LVDSA → +3V3_LVDSA
+3V3_LVDSD → +3V3_LVDSD
+3V3_LBADC → +3V3_LBADC
+3V3_DVI → +3V3_DVI
(ONLY FOR 1080P)

F6 LVDS IN

+1V8_CORE → +1V8_CORE
+2V5_DDR_MAL → +2V5_DDR_MAL
+3V3_SW → +3V3_SW
(ONLY FOR 1080P)

TO SUPPLY

F7 DC POWER SUPPLY

1710 1; 5A07 → +12V
7710 STEP DOWN REG. 11 14 7; 7701-1 7701-2; 5A07 → +3V3
5716 +3V3_IO → F2,F5
5717 +3V3_LVDSA → F3,F5
5718 +3V3_LVDSD → F3,F5
5719 +3V3_LBADC → F5
5720 +3V3_ADC → F5
5721 +3V3_SW → F1,F2,F5,F6
5722 +3V3_DVI → F5
5723 +3V3_PLL → F5
5724 +3V3_LVDSVCC → F3
7713 IN OUT COM +2V5; 5715 +2V5_DDR_MAL → F6
7714 IN OUT COM +1V8; 5712 +1V8_CORE → F5,F6; 5713 +1V8_ADC → F5; 5714 +1V8_DVI → F5

J IR/LED/LIGHT-SENSOR

1M20 5 +5V_STANDBY → +5V_STANDBY
1M20 B04A SSB

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7. Circuit Diagrams and PWB Layouts

AmbiLight Inverter: FPGA Power & Control

AI 1 FPGA POWER & CONTROL

IIC FROM MAIN BAORD ITV

FROM ITV-A CONNECTOR (LC06)

B4B-PH-SM4-TBT(LF)

	BASIC AL	AL WITH 1080P
1111	N	Y
4120	N	Y
4121	N	Y
4122	Y	N
4123	Y	N

TO/FROM AMBILIGHT MODULE

B5B-PH-SM4-TBT(LF)

7103 L6910 Monitor Protection & Ref

7102-1 SI4936ADY

7102-2 SI4936ADY

7101 LD1117DT25

7104 LD1117DT12

7105 EPCS16SI16N

7106 EPCS4SI8

AI 2

SOFTWARE DEBUGGER (FOR DEVELOPMENT)

B7B-PH-SM4-K-TB

FROM PSU

TO AMBI-LIGHT MODULE

B9B-PH-SM4-TBT(LF)

B8B-PH-SM4-TBT(LF)

B3B-PH-SM4-TBT(LF)

* FOR 37" AND 42" ONL Y

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040707

3139 123 6227.1

1111 A1 7107 F7
1112 C10 F101 F2
1113 C1 F107 F3
1114 E11 F109 G1
1115 F1 F111 E3
1116 F3 F113 A11
1117 E1 F114 A1
2110 A7 F115 A1
2111 A6 F116 A1
2112 A7 F117 B8
2113 A10 F118 B11
2114 A10 F119 C1
2115 A11 F120 C1
2116 A4 F121 C1
2117 A7 F122 D5
2118 A4 F123 D5
2119 B3 F124 E5
2120 B3 F125 E9
2121 B8 F126 E10
2122 B4 F127 E5
2123 B11 F128 E9
2124 B11 F129 E10
2125 B7 F130 E10
2126 B7 F131 E9
2127 C6 F132 E10
2128 C3 F133 F9
2129 C6 F134 E10
2130 C8 F135 F5
2131 D10 F136 F10
2132 C2 F137 D11
2133 D4 I110 A5
2134 D7 I111 A7
2135 D7 I112 A7
3110 A6 I113 A3
3111 A5 I114 A7
3112 E9 I115 A3
3114 B4 I116 C3
3115 B8 I117 C6
3116 E9 I118 C7
3117 C6 I119 C8
3118 C7 I120 C10
3119 C7 I121 C3
3120 C7 I122 D4
3121 E9 I123 D2
3122 E7 I124 D2
3123 C3 I125 E7
3124 C3 I126 F7
3125 A2 I127 F6
3126 A2 I128 A6
3127 D11 I129 C6
3128 E9 I130 B7
3129 E9 I131 A8
3130 E9 I132 C10
3131 F9 I133 A2
3132 F6 I134 A2
3133 F6 I135 A5
3134 F7 I136 A5
3135 B2 I137 A5
3136 B3
4101 F2
4102 F2
4103 F2
4104 F2
4110 C2
4111 C2
4112 D2
4113 D2
4120 A2
4121 A2
4122 A3
4123 A3
4124 G3
4125 G3
4126 G3
4127 G3
4128 G3
4129 G3
4130 G3
5106 C10
5107 E3
5111 B8
5113 D4
6110 A7
6111 E7
7101 A10
7102-1 A8
7102-2 B8
7103 A5
7104 B10
7105 D6
7106 D4

AmbiLight Inverter: FPGA I/O Banks

AI 2 FPGA I/O BANKS

AI 2

7201- 2
EP2C5F256C7 N
Φ
BANK1

ASDO
nCSO
MAIN_SDA
TPo(4)
AMBI_SDA
TPi(1)
TPi(2)
NC
NC
EMC
2247
100p
I213
I216
I218
I221
I222
I224
I228
I230
C3
F4
P1
P2
N1
N2
L1
L2
K4
K5
K1
K2
E1
E2
D3
D4
IO_C3|ASDO
IO_F4|CSO
IO_P1|LVDS0p
IO_P2|LVDS0n
IO_N1|LVDS1p
IO_N2|LVDS1n
IO_L1|LVDS2p
IO_L2|LVDS2n IO_L4|PLL1_OUTp
IO_K4|LVDS3p IO_M4|PLL1_OUTn
IO_K5|LVDS3n IO_F3|VREFB1N0
IO_K1|LVDS4n IO_J4|VREFB1N1
IO_K2|LVDS4p IO_L3
IO_E1|LVDS5p IO_M1
IO_E2|LVDS5n IO_M2
IO_D3|LVDS6p IO_M3
IO_D4|LVDS6n IO_P3
IO_E3|LVDS7p
IO_E4|LVDS7n
IO_D5|LVDS8p
IO_E5|LVDS8n
IO_C1|LVDS9p
IO_C2|LVDS9n
E3
E4
D5
E5
C1
C2
L4
M4
F3
J4
L3
M1
M2
M3
P3
I210
I211
I212
I214
I215
I220
I223
I225
I217
NC
TPo(3)
TPi(3)
TPo(0)
TPo(1)
AMBI_SCL

7201-3
EP2C5F256C7N
Φ
BANK2

NC
NC
C4 IO_C4|LVDS10 p IO_B9|LVDS21p B9
C5 IO_C5|LVDS10 n IO_A9|LVDS21n A9
G7 IO_G7|LVDS11p IO_D10|LVDS22p D10
G6 IO_G6|LVDS11n IO_D11|LVDS22n D11
F9 IO_F9|LVDS12p IO_A10|LVDS23p A10
F10 IO_F10|LVDS12 rIO_B10|LVDS23n B10
E6 IO_E6|LVDS13 p IO_G11|LVDS24p G11
F6 IO_F6|LVDS13n IO_G10|LVDS24n G10
A3 IO_A3|LVDS14 p IO_A12|LVDS25p A12
B3 IO_B3|LVDS14 n IO_B12|LVDS25n B12
A4 IO_A4|LVDS15 p IO_A13|LVDS26p A13
B4 IO_B4|LVDS15 n IO_B13|LVDS26n B13
A5 IO_A5|LVDS16 p IO_C12|LVDS27p C12
B5 IO_B5|LVDS16 n IO_C13|LVDS27n C13
C6 IO_C6|LVDS17 p IO_A14|LVDS28p A14
D6 IO_D6|LVDS17 n IO_B14|LVDS28n B14
A6 IO_A6|LVDS18 pIO_D8|VREFB2N1 D8
B6 IO_B6|LVDS18 nIO_C11|VREFB2N0 C11
F8 IO_F8|LVDS19p IO_A8 A8
F7 IO_F7|LVDS19n IO_A11 A11
B7 IO_B7|LVDS20 p IO_B11 B11
A7 IO_A7|LVDS20 n

7201- 4
EP2C5F256C7N
Φ
BANK3

NC
NC
D13 IO_D13|LVDS29 IOp M16|LVDS38 p M16
C14 IO_C14|LVDS29 IOn M15|LVDS38 n M15
D16 IO_D16|LVDS30 IOp N16|LVDS39 p N16
D15 IO_D15|LVDS30 IOn N15|LVDS39 n N15
G13 IO_G13|LVDS31p IO_P16|LVDS40 p P16
G12 IO_G12|LVDS31n IO_P15|LVDS40 n P15
H11 IO_H11|LVDS32 IOp N14|LVDS41 p N14
J11 IO_J11|LVDS32n IOn N13|LVDS41 n N13
F16 IO_F16|LVDS33p IO_M12|LVDS42 p M12
F15 IO_F15|LVDS33n IO_N12|LVDS42 n N12
G15 IO_G15|LVDS34p IO_M14|VREFB3N1 M14
G16 IO_G16|LVDS34n IO_H13|VREFB3N0 H13
J12 IO_J12|LVDS35p IO_E14|PLL2_OUTp E14
H12 IO_H12|LVDS35n IO_D14|PLL2_OUTn D14
K15 IO_K15|LVDS36p IO_E1 6 E16
K16 IO_K16|LVDS36n IO_L1 4 L14
L16 IO_L16|LVDS37p IO_P1 4 P14
L15 IO_L15|LVDS37n

7201-6
EP2C5F256C7N
Φ
POWER

+3V3-FPGA
+2V5out-FPGA
+2V5in-FPGA
+1V2-FPGA
+1V2-PL_L
VCCIO1
VCCIO2
VCCIO3
VCCIO4
VCCINT
VCCA_PLL
VCCD_PLL
GND
GND_PLL1
GND_PLL2
GNDA_PLL
B1 G3 K3 R1
A15 A2 C10 C7 E10 E7
B16 G14 K14 R16
M10 M7 P10 P7 T15 T2
G9 H10 H7 J7
M5 E12
L6 F11
A1 A16 B15 B2 C8 C9 E8 E9 G8 H14 H3 H8 H9 J14 J3 J8 J9 K9 M8 M9 P8 P9 R15 R2 T1 T16
L5 N5
D12 F12
M6 E11

7201-5
EP2C5F256C7N
Φ
BANK4

rxo0p rxo0n rxo1p rxo1n rxo2p rxo2n rxo3p rxo3n
NC
NC
M11 IO_M11|LVDS43p IO_T7|LVDS54p T7 rxe0p
L11 IO_L11|LVDS43n IO_R7|LVDS54n R7 rxe0n
T14 IO_T14|LVDS44p IO_T5|LVDS55p T5 rxe1p
R14 IO_R14|LVDS44n IO_R5|LVDS55n R5 rxe1n
T13 IO_T13|LVDS45p IO_T4|LVDS56p T4 rxe2p
R13 IO_R13|LVDS45n IO_R4|LVDS56n R4 rxe2n
T12 IO_T12|LVDS46p IO_P5|LVDS57p P5
R12 IO_R12|LVDS46n IO_P4|LVDS57n P4 NC
P12 IO_P12|LVDS47p IO_T3|LVDS58p T3 rxe3p
P13 IO_P13|LVDS47n IO_R3|LVDS58n R3 rxe3n
K11 IO_K11|LVDS48p IO_N9|LVDS59p N9
K10 IO_K10|LVDS48n IO_N10|LVDS59n N10
R10 IO_R10|LVDS49p IO_L7|LVDS60p L7
T10 IO_T10|LVDS49n IO_L8|LVDS60n L8
L9 IO_L9|LVDS50p IO_N11|VREFB4N0 N11
L10 IO_L10|LVDS50n IO_N8|VREFB4N1 N8
T11 IO_T11|LVDS51p IO_L12 L12
R11 IO_R11|LVDS51n IO_P11 P11
T9 IO_T9|LVDS52p IO_T6 T6
R9 IO_R9|LVDS52n
T8 IO_T8|LVDS53p
R8 IO_R8|LVDS53n
NC
NC

+3V3
+2V5-PF
+2V5-PF
+1V2
+1V2
+2V5out-FPGA
+2V5in-FPGA
+1V2-FPGA
+1V2-PLL
5210 30 R F21 0 2218 1u 0
5211 30 R F21 1 222 0 4u 7
5212 30 R F21 2 2226 4u 7
5215 30 R 2240 47 u 4V
5214 30 R F21 4
5213 30R F213
2214 10n
2215 10n
2216 10n
2217 10n
2219 10n
222 1 10n
222 2 10n
2223 10n
2224 10n
2225 10n
2210 10 n
221 1 10n
2212 10n
2213 10n
2227 10n
222 8 10n
2229 10n
2230 10 n
2231 10n
2232 10n
2242 10n
2243 10 n
2244 10n
2245 10 n
2233 1u 0
2234 10 n
2235 10n
2236 10 n
2237 10n

7201- 1
EP2C5F256C7N
Φ
CONTROL

CLK_OSC1
MAIN_SCL
NC
rxoclkp
rxoclkn
rxeclkp
rxeclkn
DATA0
DCLK
EMC
2246
100p
CLK
DATA0
DCLK
H2 H1 J2 J1 H16 H15 J15 J16
F1 H4
CE
STATUS
CONFIG
CONF_DONE
MSEL[1:0]
TCK
TMS
TDO
TDI
G5 M13 J5 L13 J13 K12 F2 G1 G2 H5
F231
F232
F233
TCK_FPGA
TMS_FPGA
TDO_FPGA
TDI_FPGA
+3V3-FPGA
3210 10K
3211 10K
3212 10K
F234
CE
CONFI G
CONF_DONE
4210
4211 RES

7201-7
EP2C5F256C7N
Φ
NC

NC
NC
NC
NC
B8 C15 C16 D1 D2 D7 D9 E13 E15 F13 F14 F5 G4
H6 J10 J6 K13 K6 K7 K8 N3 N4 N6 N7 P6 R6

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2210 F4
2211 F4
2212 F4
2213 F5
2214 E3
2215 E3
2216 E4
2217 E4
2218 E2
2219 F2
2220 F2
2221 F2
2222 F3
2223 F3
2224 F3
2225 F3
2226 G2
2227 G2
2228 G2
2229 G3
2230 G3
2231 G3
2232 G3
2233 I2
2234 I3
2235 I3
2236 I3
2237 I3
2240 H2
2242 H3
2243 H3
2244 H3
2245 H3
2246 I6
2247 C2
3210 H8
3211 H9
3212 I9
4210 H10
4211 I10
5210 E1
5211 F1
5212 G1
5213 H2
5214 H1
5215 G1
7201-1 H7
7201-2 B3
7201-3 A7
7201-4 A11
7201-5 D11
7201-6 D7
7201-7 H11
F210 E1
F211 F1
F212 G1
F213 H2
F214 H1
F231 H8
F232 H8
F233 H8
F234 H9
I210 B4
I211 B4
I212 B4
I213 B2
I214 B4
I215 B4
I216 C2
I217 C4
I218 C2
I220 C4
I221 C2
I222 C2
I223 C4
I224 C2
I225 C4
I228 C2
I230 C2

AmbiLight Inverter: FPGA LVDS

AI 3 FPGA LVDS

AI 3

TO LCD PANEL

TO / FROM SSB

+VDISP

F314

EMC 2323 22n

EMC 2322 22n

1311

1310

0-1453230-3

rxe0n 3320 100R 3330 22R
rxe0p 3331 22R
rxe1n 3321 100R 3332 22R
rxe1p 3333 22R
rxe2n 3322 100R 3334 22R
rxe2p 3335 22R
rxeclkn 3323 100R 3336 22R
rxeclkp 3337 22R
rxe3n 3324 100R 3338 22R
rxe3p 3339 22R
M_SCL
M_SDA
rxo0n 3340 22R
3325 100R
rxo0p 3341 22R
4301 4302
rxo1n 3342 22R
3326 100R
rxo1p 3343 22R
4303 4304
rxo2n 3344 22R
3327 100R
rxo2p 3345 22R
4305 4306
rxoclkn 3346 22R
3328 100R
rxoclkp 3347 22R
4307 4308
rxo3n 3348 22R
3329 100R
rxo3p 3349 22R
4309 4310

F310 F311 F313 F316 F317 F341 F342 F318 F321 F343 F323 F345 F346 F347 F327 F328 F348 F349 F350 F333 F334 F337 F340 F351

1320 1321 1322 1323 1324 1325 1326 1327 1328 1329 DLW21S

F352 F353 F354 F355 F356 F357 F358 F359 F360 F361 F362 F363 F364 F365 F366 F367 F368 F369 F370 F371

M_SCL
M_SDA

	BASIC AL	AL WITH 1080P
4301	Y	N
4302	Y	N
4303	Y	N
4304	Y	N
4305	Y	N
4306	Y	N
4307	Y	N
4308	Y	N
4309	Y	N
4310	Y	N

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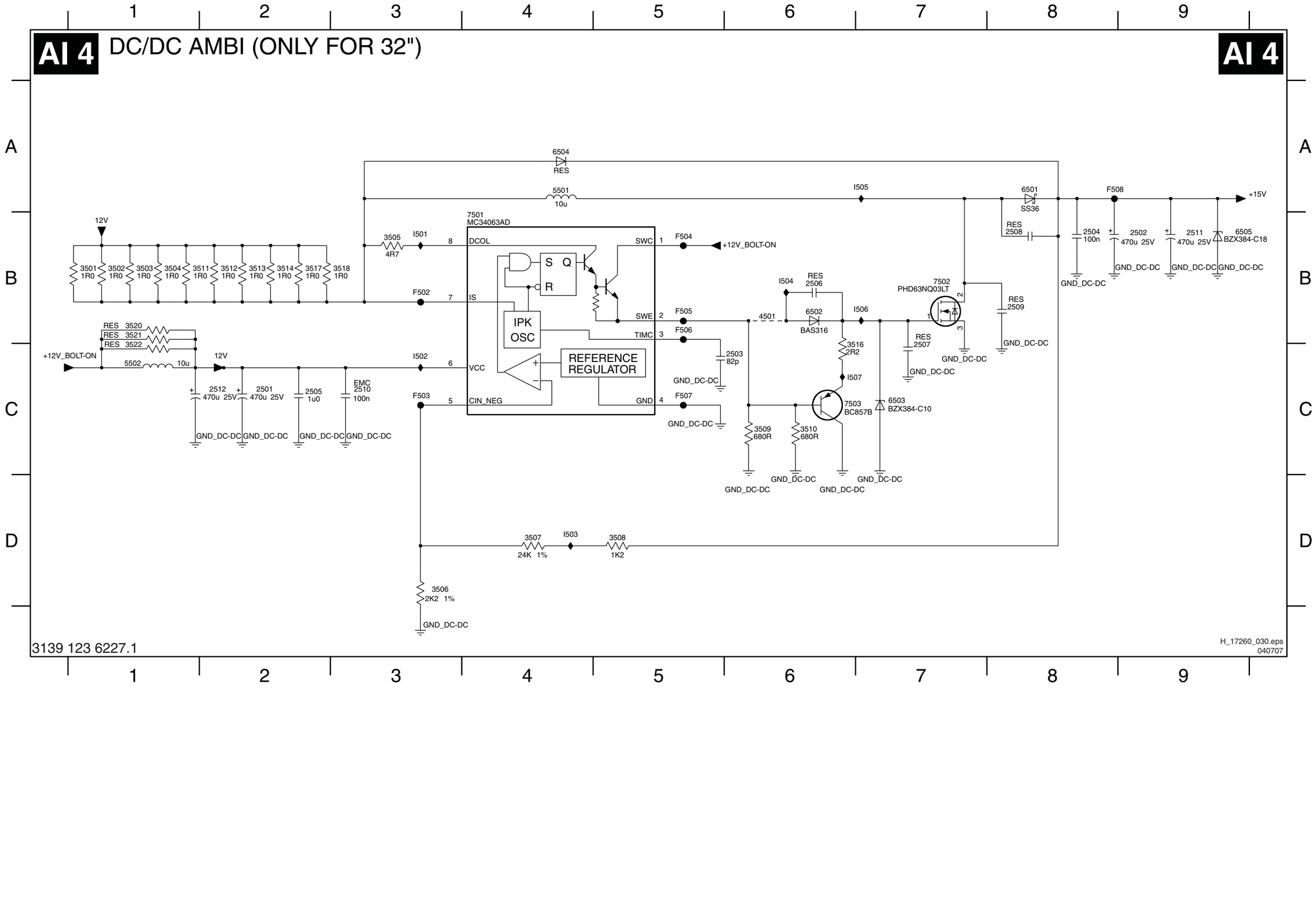
1310 A9 F352 A9
1311 A4 F353 A9
1320 A6 F354 A9
1321 A6 F355 A8
1322 B6 F356 A8
1323 B6 F357 A8
1324 B6 F358 B8
1325 C6 F359 B8
1326 C6 F360 B8
1327 D6 F361 B8
1328 D6 F362 B8
1329 E6 F363 B8
2322 A9 F364 B8
2323 A3 F365 B8
3320 A1 F366 B8
3321 A1 F367 B8
3322 B1 F368 B8
3323 B1 F369 B8
3324 C1 F370 C9
3325 C1 F371 C9
3326 D1
3327 E1
3328 E1
3329 F1
3330 A2
3331 A2
3332 A2
3333 A2
3334 B2
3335 B2
3336 B2
3337 B2
3338 B2
3339 C2
3340 C1
3341 C1
3342 D1
3343 D1
3344 D1
3345 E1
3346 E1
3347 F1
3348 F1
3349 F1
4301 C2
4302 C2
4303 D2
4304 D2
4305 E2
4306 E2
4307 F2
4308 F2
4309 F2
4310 F2
F310 A4
F311 A4
F313 A4
F314 A5
F316 A4
F317 A4
F318 B4
F321 B4
F323 B4
F327 B4
F328 B4
F333 B4
F334 C4
F337 C4
F340 C4
F341 A4
F342 A4
F343 B4
F345 B4
F346 B4
F347 B4
F348 B4
F349 B4
F350 B4
F351 C4

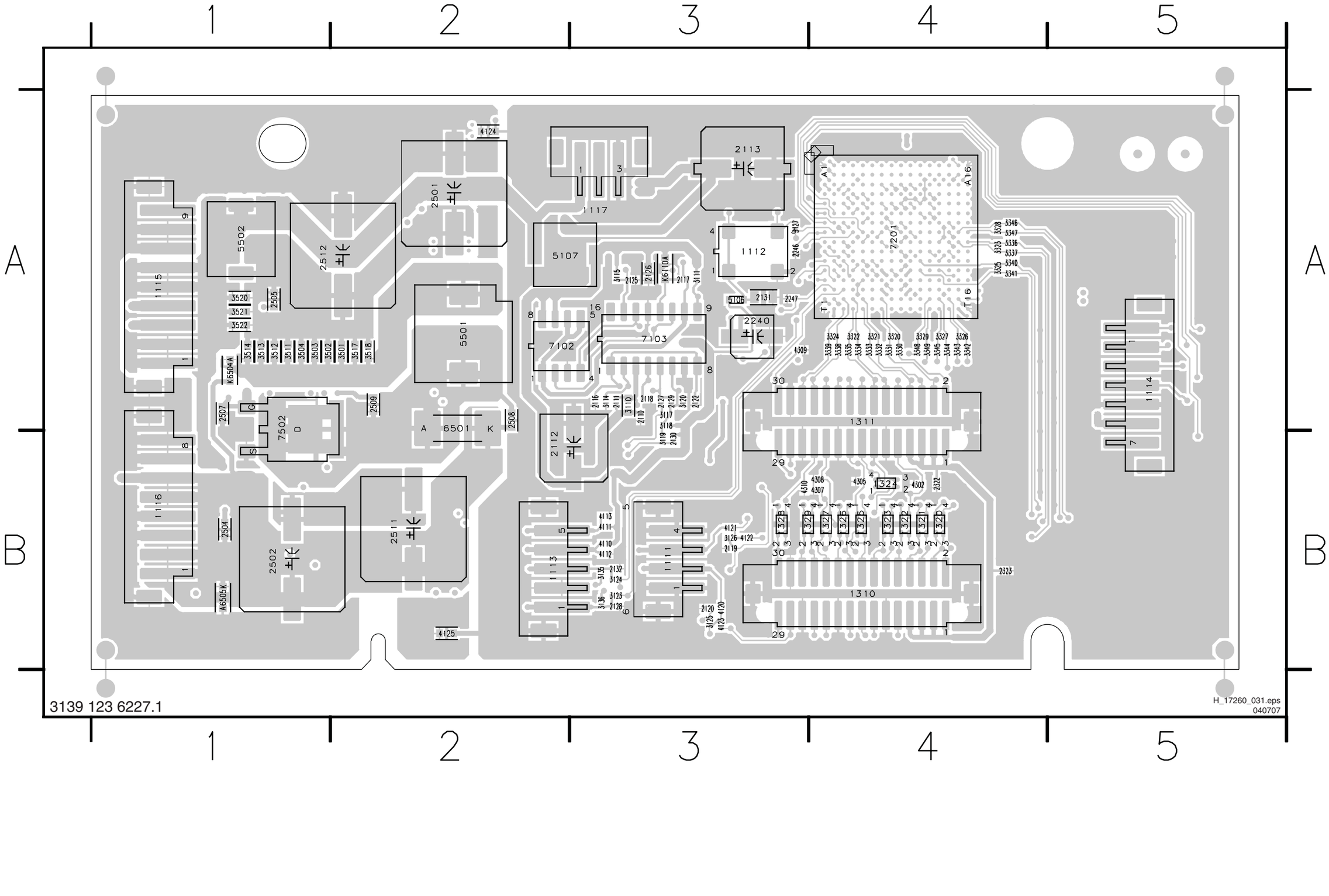
AmbiLight Inverter: DC/DC (32” Only)

2501 C2	2504 B8	2507 C7	2510 C3	3501 B1	3504 B1	3507 D4	3510 C6	3513 B2	3517 B2	3521 B1	5501 A4	6502 B6	6505 B9	7503 C6	F504 B5	F507 C5	I502 C3	I505 A7
2502 B9	2505 C2	2508 B8	2511 B9	3502 B1	3505 B3	3508 D5	3511 B2	3514 B2	3518 B3	3522 C1	5502 C1	6503 C7	7501 B4	F502 B3	F505 B5	F508 A8	I503 D4	I506 B7
2503 C6	2506 B6	2509 B8	2512 C2	3503 B1	3506 D3	3509 C6	3512 B2	3516 C6	3520 B1	4501 B6	6501 A8	6504 A4	7502 B7	F503 C3	F506 B5	I501 B3	I504 B6	I507 C6



Layout AmbiLight Inverter Panel (Top Side)

1111 B3	1117 A3	1323 B4	1329 B3	2117 A3	2126 A3	2132 B3	2501 A2	2509 A2	3115 A3	3124 B3	3320 A4	3326 A4	3332 A4	3338 A4	3344 A4	3501 A2	3513 A1	3522 A1	4121 B3	4305 B4	5107 A2	6505 B1
1112 A3	1310 B4	1324 B4	2110 A3	2118 A3	2127 A3	2240 A3	2502 B1	2511 B2	3117 A3	3125 B3	3321 A4	3327 A4	3333 A4	3339 A4	3345 A4	3502 A1	3514 A1	4110 B3	4122 B3	4307 B4	5501 A2	7102 A2
1113 B2	1311 A4	1325 B4	2111 A3	2119 B3	2128 B3	2246 A3	2504 B1	2512 A1	3118 A3	3126 B3	3322 A4	3328 A4	3334 A4	3340 A4	3346 A4	3503 A1	3517 A2	4111 B3	4123 B3	4308 B4	5502 A1	7103 A3
1114 A5	1320 B4	1326 B4	2112 B2	2120 B3	2129 A3	2247 A3	2505 A1	3110 A3	3119 B3	3127 A3	3323 A4	3329 A4	3335 A4	3341 A4	3347 A4	3504 A1	3518 A2	4112 B3	4124 A2	4309 A3	6110 A3	7201 A4
1115 A1	1321 B4	1327 B4	2113 A3	2122 A3	2130 B3	2322 B4	2507 A1	3111 A3	3120 A3	3135 B3	3324 A4	3330 A4	3336 A4	3342 A4	3348 A4	3511 A1	3520 A1	4113 B3	4125 B2	4310 B3	6501 A2	7502 A1
1116 B1	1322 B4	1328 B3	2116 A3	2125 A3	2131 A3	2323 B4	2508 A2	3114 A3	3123 B3	3136 B3	3325 A4	3331 A4	3337 A4	3343 A4	3349 A4	3512 A1	3521 A1	4120 B3	4302 B4	5106 A3	6504 A1	



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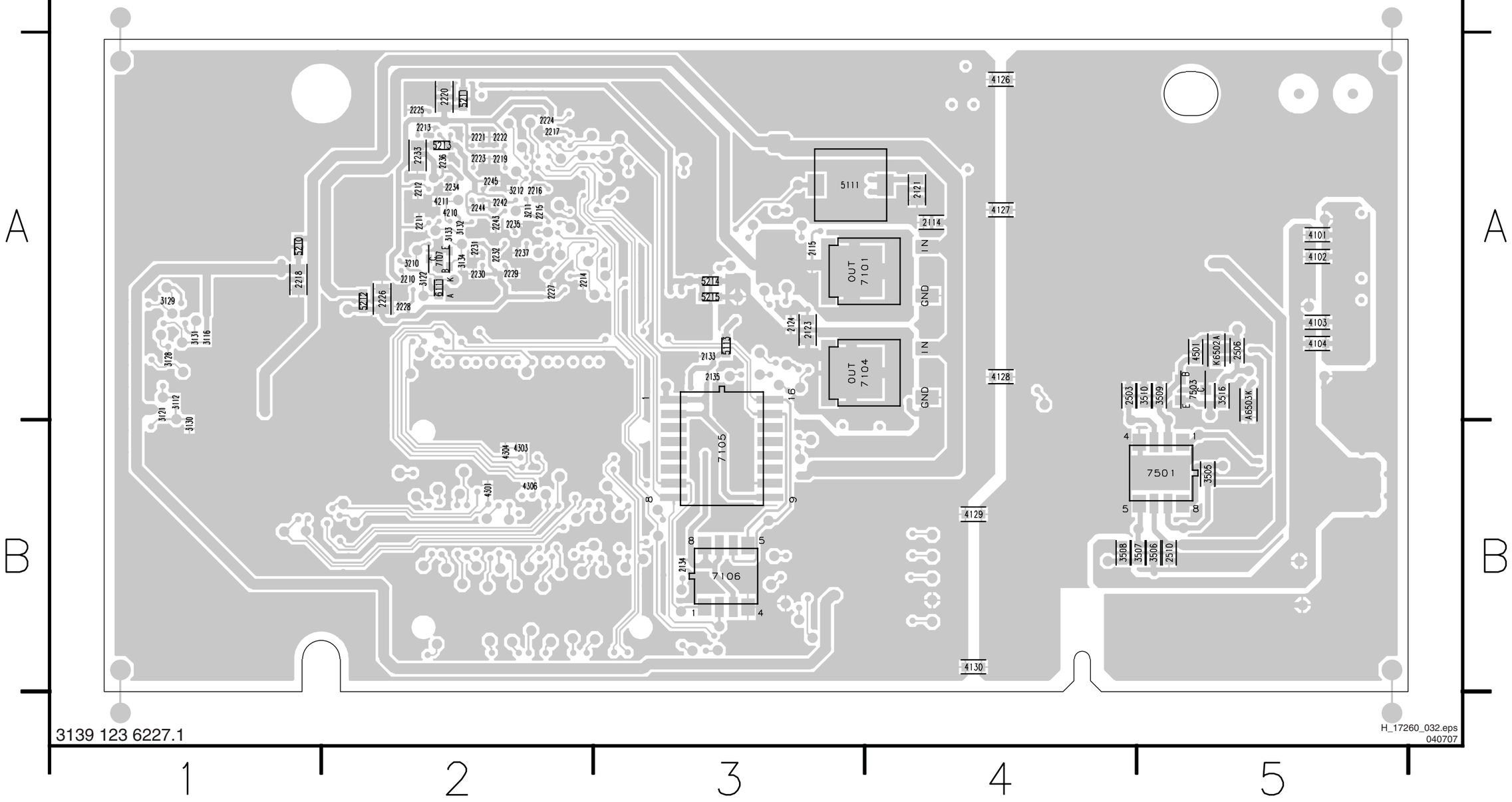
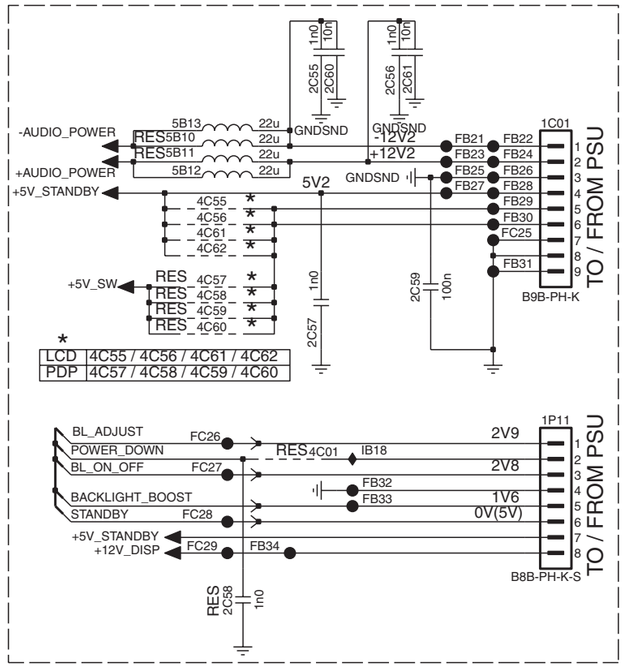
Layout AmbiLight Inverter Panel (Bottom Side)

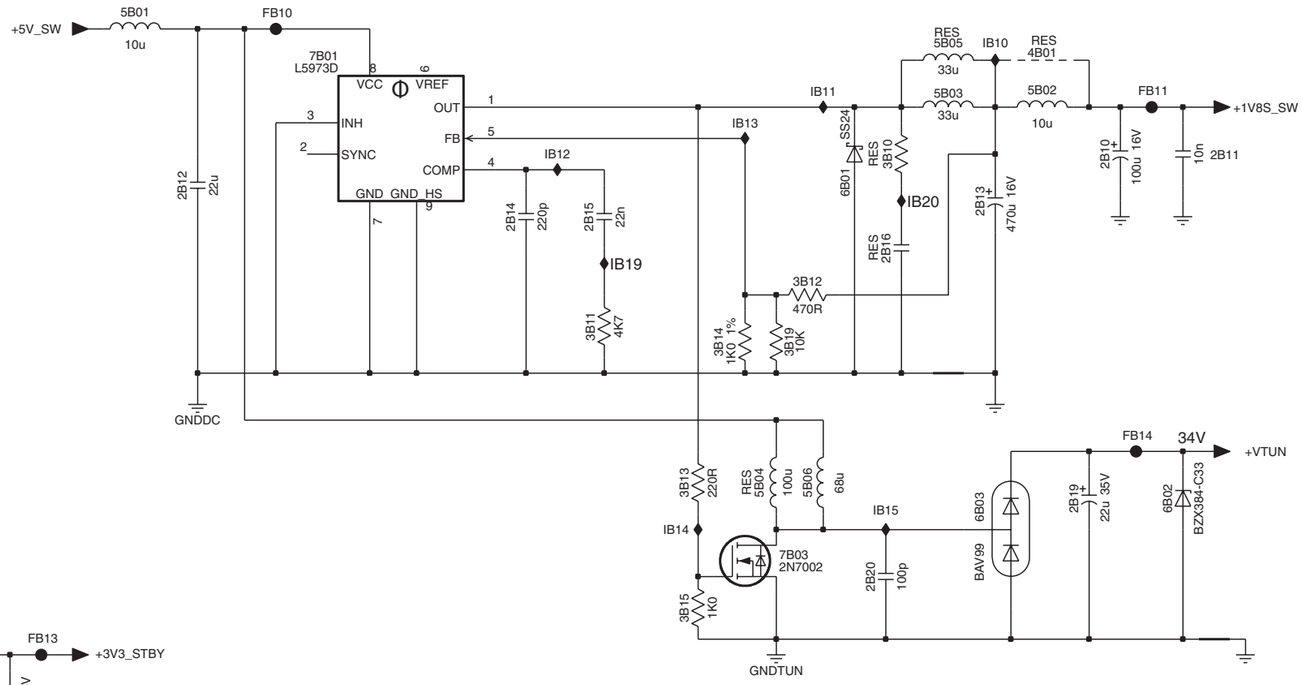
2114 A4 2124 A3 2210 A2 2214 A2 2218 A1 2222 A2 2226 A2 2230 A2 2234 A2 2242 A2 2503 A4 3116 A1 3129 A1 3133 A2 3212 A2 3508 B4 4101 A5 4126 A4 4130 B4 4303 B2 5111 A3 5212 A2 6111 A2 7104 A3 7501 B5
2115 A3 2133 A3 2211 A2 2215 A2 2219 A2 2223 A2 2227 A2 2231 A2 2235 A2 2243 A2 2506 A5 3121 A1 3130 B1 3134 A2 3505 B5 3509 A5 4102 A5 4127 A4 4210 A2 4304 B2 5113 A3 5213 A2 6502 A5 7105 B3 7503 A5
2121 A4 2134 B3 2212 A2 2216 A2 2220 A2 2224 A2 2228 A2 2232 A2 2236 A2 2244 A2 2510 B5 3122 A2 3131 A1 3210 A2 3506 B5 3510 A5 4103 A5 4128 A4 4211 A2 4306 B2 5210 A1 5214 A3 6503 A5 7106 B3
2123 A3 2135 A3 2213 A2 2217 A2 2221 A2 2225 A2 2229 A2 2233 A2 2237 A2 2245 A2 3112 A1 3128 A1 3132 A2 3211 A2 3507 B5 3516 A5 4104 A5 4129 B4 4301 B2 4501 A5 5211 A2 5215 A3 7101 A3 7107 A2

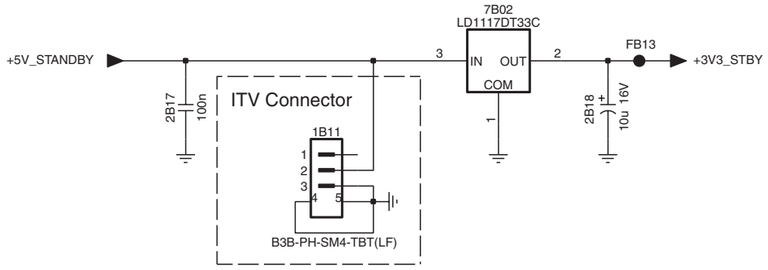


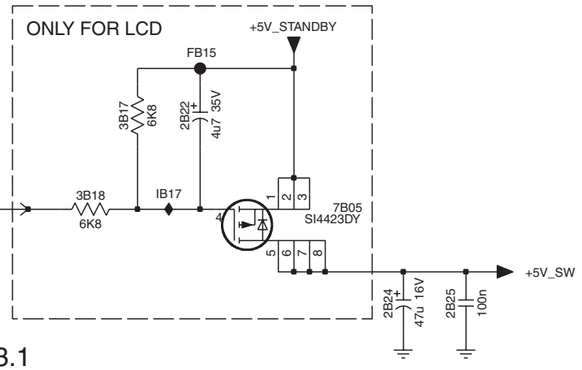
SSB: DC/DC

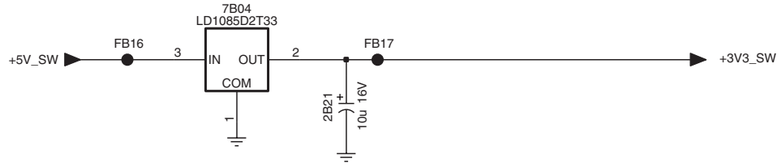
B02 DC - DC











(---V) MEASURED IN STANDBY

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1B11 D2
1C01 A3
1P11 C3
2B10 B8
2B11 B9
2B12 B4
2B13 B8
2B14 B6
2B15 B6
2B16 B7
2B17 D1
2B18 D3
2B19 C8
2B20 D7
2B21 E7
2B22 F2
2B24 F3
2B25 F3
2C55 A2
2C56 A2
2C57 B2
2C58 C2
2C59 B2
2C60 A2
2C61 A2
3B10 B7
3B11 C6
3B12 B7
3B13 C7
3B14 C7
3B15 D7
3B17 F2
3B18 F2
3B19 C7
4B01 A8
4C01 C2
4C55 B1
4C56 B1
4C57 B1
4C58 B1
4C59 B1
4C60 B1
4C61 B1
4C62 B1
5B01 A4
5B02 A8
5B03 A8
5B04 C7
5B05 A8
5B06 C7
5B10 A1
5B11 A1
5B12 A1
5B13 A1
6B01 B7
6B02 C9
6B03 C8
7B01 A5
7B02 D3
7B03 D7
7B04 D6
7B05 F3
FB10 A5
FB11 A9
FB13 D4
FB14 C9
FB15 E2
FB16 D6
FB17 D7
FB21 A3
FB22 A3
FB23 A3
FB24 A3
FB25 A3
FB26 A3
FB27 B3
FB28 B3
FB29 B3
FB30 B3
FB31 B3
FB32 C2
FB33 C2
FB34 C2
FC25 B3
FC26 C1
FC27 C1
FC28 C1
FC29 C1
IB10 A8
IB11 A7
IB12 B6
IB13 B7
IB14 C6
IB15 C7
IB17 F2
IB18 C2
IB19 B6
IB20 B8

SSB: Tuner & Demodulator

B03A TUNER IF & DEMODULATOR

B03A

*	1160
CHINA	TEDE9-286B
AP(PAL)	UV1316E/A I H4
NA/LA/AP(NTSC)	UV1338/A F SH4

*	AP	CHINA	LATAM
4162	--	Y	--
4164	Y	--	--
4166	--	Y	Y
4167	--	Y	--
4168	--	Y	--
4174	Y	--	Y

*	1161	1162	1163
AP	OFWK7265L	OFWK9361L	--
CHINA	OFWK3956L	OFWK9352L	OFWK3955L
LATAM	OFWM1967L	--	--

DEMODULATOR

EUROPE & AP PAL-MUTLI ONLY

FOR I93 ONLY

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3139 123 6263.1

U2 B4	F169 D8
1104 F6	F170 E13
1160 A4	F171 G13
1161 B12	F172 G11
1162 E12	F173 H13
1163 D11	F174 B4
2123 F5	I124 F4
2124 F3	I125 F5
2125 F4	I126 F4
2126 F4	I127 F4
2127 F6	I128 G7
2128 G9	I129 H7
2133 G8	I130 I7
2134 H9	I131 I6
2135 H9	I133 I5
2136 H8	I135 I6
2137 I7	I136 I6
2138 I3	I138 G8
2139 I7	I139 H8
2140 I5	I142 F6
2141 I5	I143 I4
2143 F6	I144 I5
2144 I5	I160 D10
2145 I5	I161 D10
2158 C2	I162 A7
2159 C1	I163 B8
2160 B7	I164 B9
2161 B8	I165 C4
2162 C8	I166 C9
2163 C8	I167 C4
2164 C8	I168 D6
2165 D4	I170 D9
2166 D5	I171 D8
2167 D7	I173 A6
2168 D10	I174 B5
2169 D5	I175 B5
2170 D5	I176 C2
2171 G12	I177 C2
2172 G12	I178 F8
2173 H12	I179 B11
2174 H12	I180 B11
2175 D7	I181 D12
3123 F5	I182 D12
3124 F3	I183 E11
3125 G8	I184 E11
3126 H8	I185 G12
3127 I7	I186 H12
3128 I5	I187 A7
3129 I5	I189 C1
3135 F8	
3160 A7	
3161 A8	
3162 C9	
3163 C10	
3164 C9	
3165 C3	
3166 C4	
3167 C4	
3168 D9	
3169 D3	
3170 D6	
3171 D7	
3172 D10	
3173 D4	
3174 D10	
3175 D8	
3176 D6	
3177 E8	
3178 G12	
3179 H12	
4124 G9	
4162 C11	
4163 C3	
4164 C11	
4166 C11	
4167 C12	
4168 C13	
4169 C3	
4174 B11	
4175 C4	
5116 H9	
5159 C1	
5160 A7	
5161 B8	
5162 C12	
5163 C8	
5164 C4	
5165 E12	
5166 C4	
5167 G12	
5168 H12	
6160 C9	
6161 C10	
6163 D7	
7113 F3	
7114 G8	
7160 B7	
7161 C3	
7162 D3	
7163 D10	
7164 D9	
F128 F4	
F130 G8	
F140 H9	
F160 B6	
F161 B6	
F162 B13	
F163 C13	
F164 C7	
F165 C7	
F166 D5	
F167 D5	
F168 E13	

SSB: Micro Processor

B04A MICROPROCESSOR

B04A

TO / FROM SIDE IO

TO / FROM IR/ LED & KEYBOARD

ITV_Connector A:

COMPAIR

EPROM 1Mx8/512Kx16

M29W800DT-70N6

M30300SAGP

BD45275G

NL27WZ08USG

BC847BW

BC847BPN

PDTC114ET

M24C64-WMN6

EEPROM (8Kx8)

BSH111

1N4148

BZX384-C6V8

BZX384-B5V1

S3B-PH-SM4-TB

B10B-PH-SM4-TBT(LF)

B6B-PH-K B7B-PH-K

B11B-PH-K

FOR EMC

FOR DVB ONLY

"4315" PANEL

BOOT LOADER

	FOR UART	FOR LATAM 26" ME5P
3L08	Y	--
3L09	Y	--
4L06	--	Y
4L07	--	Y
4L08	--	Y
4L09	Y	--

3139 123 6263.1

H_17260_003.eps 020707

1301 B3	3381 G2	F342 I2
1302 I2	3382 E7	F343 I2
1303 I2	3383 F2	F344 I3
1304 A9	3384 H2	F345 G10
1305 I10	3385 H2	F346 I5
1306 H8	3386 H2	F347 I5
1307 I8	3387 E5	F348 I5
1308 I9	3388 E5	F349 I5
1309 I9	3389 H11	F350 F8
1310 I9	3390 I11	F351 I5
1311 H7	3391 I11	F352 I5
1312 I5	3392 I11	F353 I5
1314 I3	3393 E1	F354 I5
1315 H8	3394 D1	F356 E8
1M20 H8	3395 E2	F357 H8
2310 A4	3396 C7	F360 I10
2311 C13	3397 E5	F361 D3
2312 A4	3398 E2	F362 C5
2313 A4	3399 E2	F363 G11
2314 B3	3L01 G6	F364 G11
2315 B1	3L02 H5	F365 G11
2316 B3	3L04 E2	F366 E11
2317 C2	3L05 B5	F367 E11
2318 C3	3L06 H6	F368 C13
2319 E11	3L07 H6	F369 E11
2320 F9	3L08 H5	F379 D2
2321 G7	3L09 H5	F380 B3
2322 G7	3L10 H12	F381 B2
2323 G1	3L11 C7	F382 H10
2324 F7	3L12 G7	F383 I10
2325 F8	3L13 G7	F384 I10
2326 E8	3L14 G9	F385 D3
2327 H9	3L15 F1	F386 C5
2328 I10	3L16 H12	F387 I10
2329 I11	3L20 A11	F388 D1
2330 I11	3L21 A11	FL20 A9
2331 I11	3L22 B11	FL21 A9
2332 I12	3L23 B11	FL22 A9
2333 I11	3L24 A11	FL23 A9
2334 I12	3L25 A11	FL24 A9
2335 I12	3L26 C5	FL25 A9
2336 I12	4301 F6	FL26 A9
2337 I12	4302 H12	I311 B5
2338 E1	4303 H12	I312 B3
2339 I12	4306 G12	I313 B5
2340 I11	4307 G12	I314 B5
2L20 A10	4308 H5	I318 G9
2L21 A10	4309 I12	I320 C5
2L22 A11	4310 I11	I321 D10
2L23 A11	4313 H6	I322 D10
2L24 A11	4314 H10	I323 D10
2L25 A11	4315 H10	I326 C5
2L26 B10	4316 G9	I328 D10
2L27 B10	4323 F1	I329 E9
2L28 B11	4324 D2	I330 D1
2L29 B11	4325 D2	I331 D3
2L30 B10	4326 I10	I332 D1
2L31 B10	4L06 H6	I333 D3
2L32 B11	4L07 H7	I334 D1
2L33 B11	4L08 H7	I335 D3
3300 C1	4L09 H7	I336 D5
3303 B5	4L20 A11	I337 D1
3304 D6	4L21 A11	I338 D3
3305 G12	4L24 A11	I340 C8
3306 G7	4L25 A11	I341 D5
3307 G7	5301 A4	I342 D5
3309 G12	5302 C13	I344 E5
3310 B6	5304 I11	I345 E5
3311 B5	6301 B2	I347 G6
3312 B5	6302 D10	I349 G6
3313 B5	6303 E10	I351 F5
3314 B3	6304 E10	I352 D3
3315 B5	6305 F9	I353 D1
3316 B2	6306 I2	I354 F5
3317 B5	6307 I2	I357 C5
3318 B3	6308 H9	I359 G5
3319 B2	6309 I8	I362 D6
3321 B3	6310 I9	I363 G5
3323 B3	6311 I9	I364 D5
3324 C5	6312 I9	I365 G3
3325 C1	6313 I10	I366 E6
3326 D11	6317 D1	I367 E6
3327 C5	6318 E2	I368 H3
3328 D10	7308 E1	I369 H5
3329 C5	7310 C12	I370 H5
3330 D10	7311 B3	I373 I10
3331 C2	7312 B1	I374 I12
3332 D2	7313-1 E9	I376 I12
3333 C1	7313-2 C10	I380 E1
3334 C2	7314 F6	I381 C6
3335 C2	7315 G10	I382 H5
3336 E11	7316 F2	I383 H5
3337 E9	7317 E1	I384 H3
3338 D3	7320 G11	I387 B3
3339 D3	7321 G12	I389 C5
3340 D3	7322 C7	I390 C6
3341 D3	7323-1 G1	I391 H6
3342 D3	7323-2 F1	I392 H6
3343 I1	7324 C6	I393 E2
3344 D5	F303 G6	I394 E2
3345 I1	F304 C6	I395 B5
3346 D5	F305 F5	I396 E5
3347 D5	F309 H5	I397 E5
3348 D5	F310 C11	I398 E5
3349 E5	F311 C11	I399 D1
3350 E5	F312 C13	IL20 A11
3351 G7	F313 C11	IL21 A12
3352 G7	F314 C13	IL22 A11
3353 F10	F315 C11	IL23 A12
3354 G6	F316 C13	
3355 G11	F317 C11	
3356 G6	F318 C13	
3357 G11	F319 C11	
3358 F7	F320 C13	
3359 E7	F321 C11	
3360 G5	F322 C13	
3361 F5	F323 B6	
3362 C6	F324 D11	
3363 D3	F325 D13	
3364 D3	F326 D11	
3365 F5	F327 D13	
3366 F5	F328 D11	
3367 F5	F329 D11	
3368 C5	F330 B11	
3371 G5	F331 D11	
3372 H2	F332 D11	
3373 G5	F333 D11	
3374 G12	F334 D11	
3375 H2	F335 D11	
3376 D6	F336 D11	
3377 F7	F337 D13	
3378 F7	F338 D11	
3379 E7	F339 D11	
3380 D5	F340 D11	
	F341 E11	

SSB: Video Processor

B04B VIDEO PROCESSOR

B04B

VIDEO PROCESSOR

	LGE	SDI	FHP
CTRL-DISP1		RESET Semi standby : H Normal and off : L	
CTRL-DISP2(LCD_PWR_on)	DISPEN On time : H Off time : Don't care		CPU-GO On time : H Off time : Don't care
CTRL-DISP3(Rev_Standby)			PDWIN On time : H Off time : Don't care
CTRL-DISP4			PDP-GO On time : H Semi standby : L Off time : Don't care

"200 ~ 299"

Multi 12NC: 3139 123 62621
SINGLE 12NC: 3139 123 62631

When use 2MX32 SDRAM,use

When use 4MX32 SDRAM,use

DISPLAY CONTROL
LVDS
CONNECTOR

LCD

PDP

VDISP-SWITCH

FOR LCD ONLY

H_17260_004.eps
020707

1201 D4	3235 E16	I224 C15	
1210 H12	3238 E16	I225 C16	
1211 I12	3239 K4	I230 E4	
1212 I12	3240 K3	I231 E4	
1213 J12	3241 K9	I232 E4	
1214 J12	3242 K9	I233 E4	
1215 L5	3243 K9	I236 E15	
1216 L7	3244 A7	I238 J4	
1217 L6	3245 K8	I239 K4	
1218 L7	3246 J14	I240 K8	
1G50 H15	3247 J14	I241 K9	
1G51 H17	3248 B7	I242 A6	
2203 K7	3251 J3	I243 A7	
2204 K6	3253 K3	I244 L8	
2205 K5	3255 K3	I245 A4	
2206 K7	3256 L3	I246 A9	
2207 B17	3257 J1	I247 B7	
2208 B16	3258 K1	I248 A6	
2209 B16	3260-1 B12	I249 B9	
2210 B17	3260-2 B12	I250 B4	
2211 C5	3260-3 B12	I251 B7	
2212 C5	3260-4 B12	I252 B9	
2213 C5	3261-1 B12	I253 C9	
2214 C5	3261-2 B12	I254 C7	
2215 C5	3261-3 B12	I255 D2	
2216 C9	3261-4 B12	I256 D2	
2217 B13	3262-1 B12	I257 J4	
2218 B13	3262-2 B12	I258 J4	
2219 B13	3262-3 C12	I259 J10	
2220 B13	3262-4 C12	I260 J10	
2221 B13	3263-1 E12	I261 J10	
2222 B13	3263-2 E12	I262 J10	
2223 B14	3263-3 E12	I263 K8	
2224 E12	3263-4 E12	I264 L3	
2225 E12	3264-1 E12	I265 A3	
2226 E13	3264-2 E12	I266 A2	
2227 E13	3264-3 E12	I267 B3	
2228 E13	3264-4 E12	I268 K5	
2229 B14	3265-1 E12	I269 K6	
2230 C5	3265-2 E12	I270 K7	
2231 C5	3265-3 F12	I271 K8	
2232 C5	3265-4 F12	I272 K6	
2233 D8	3266 C12	I273 K6	
2234 D8	3267 F13	I274 K6	
2235 D8	3268-1 F12	I275 K7	
2236 D3	3268-2 C12		
2237 D4	3268-3 F12		
2238 D4	3268-4 C12		
2239 D4	3271-1 C12		
2240 D4	3271-2 F12		
2241 D4	3271-3 C12		
2242 D4	3271-4 F12		
2243 D5	3272 J9		
2244 D5	3273 A2		
2245 D8	3274 B2		
2246 D3	3275 A3		
2247 E3	3276 B3		
2248 C15	4126 L6		
2250 F4	4126 L6		
2251 F4	4203 B14		
2252 F4	4204 B15		
2253 F4	4205 B15		
2254 F4	4206 B15		
2255 F4	4207 L9		
2256 F4	4210 L5		
2257 F4	4211 L5		
2258 F4	4212 L7		
2259 F4	4213 L8		
2260 F4	4214 B16		
2261 F4	4215 B16		
2262 F16	4216 L6		
2263 F16	4217 L7		
2264 F16	5210 B4		
2265 F16	5211 A16		
2266 J11	5212 A14		
2267 I8	5213 C9		
2268 I8	5214 C4		
2269 J11	5215 A16		
2270 J11	5216 C3		
2271 J10	5217 B16		
2272 J10	5218 A6		
2273 J3	5219 A4		
2274 J10	5220 A8		
2275 J3	5221 B6		
2276 J3	5222 B8		
2277 J3	5223 B4		
2278 K9	5224 B7		
2279 A7	5225 B8		
2280 A6	5226 C7		
2281 L8	5227 C8		
2282 A9	5228 D13		
2283 K15	6201 C17		
2284 A4	6202 C15		
2285 K15	7202 D4		
2286 B7	7203 K9		
2287 B9	7204 B11		
2288 B6	7205 E11		
2289 B4	7206 K9		
2290 B7	7207 B16		
2291 B9	7208 C15		
2292 C7	7210 A15		
2293 C9	7211-1 J2		
2294 K3	7211-2 K2		
2295 E13	7211-3 K2		
2296 E13	7211-4 L2		
2297 E13	7211-5 L4		
2298 D8	7211-6 L4		
3201-1 I4	7213-1 B3		
3201-2 I4	7213-2 B3		
3201-3 I4	7213-3 B3		
3201-4 I4	7213-4 B3		
3202-1 I4	7213-5 C3		
3202-2 I4	7213-6 C3		
3202-3 I4	7214 A2		
3202-4 I4	F210 A17		
3203-1 I4	F211 C9		
3203-2 I4	F212 E16		
3203-3 I4	F213 E16		
3203-4 I4	F214 E16		
3204-1 J4	F215 E16		
3204-2 J4	F217 I17		
3204-3 J4	F218 I15		
3204-4 J4	F219 I15		
3210 C16	F220 I15		
3211 D8	F221 I15		
3212 D2	F222 I15		
3213 C15	F223 I15		
3215 D2	F224 I15		
3216 C15	F225 J15		
3217 C16	F226 J15		
3219 E1	F227 J15		
3220 E2	F228 J15		
3221 E1	F229 J15		
3222 E2	F230 J15		
3223 E16	F231 C5		
3224 E16	F232 E4		
3225 E16	I210 B5		
3226 E16	I211 A16		
3227 E16	I213 A13		
3228 G2	I214 C5		
3229 G2	I215 C16		
3230 G2	I216 B15		
3231 G2	I217 D8		
3232 G3	I218 E8		
3233 E16	I220 C15		

SSB: PNX2015: Audio Processor

B04C AUDIO PROCESSOR

B04C

+12V_DISP
4401
4402
+AUDIO_POWER_+12V_DISP
7410 L78L08ACU
IN OUT COM
F401 +8V
2439 470n
2440 470n
I426
220u 25V
1n5
470p
2410
2409
2408
+5V_SW
3402 1R0
5401 120R
5402 120R
+5V_D
+5V_AUD
2411 10u
2414 10u
+5V_AUD
F402
2412 220p
2441 1n5
2442 470p
+5V_D
F403
2413 220p
2443 1n5
2444 470p
7411 MSP4450P-VK-E8 000
61 62 39
A AH
SUP
12 13
DVSUP
2415 3p3
2416 3p3
1411 18M432
XTALIN 2V4 67
XTALOUT 2V4 68
IN XTAL OUT
RST_AUD
+5V_AUD
100n 2419
19 RESETQ
80 STNDBYQ
66 TESTEN
69 TP
IIC_SCL
IIC_SDA
3410 100R
3411 100R
RES 2446 100p
RES 2447 100p
I412
I413
2 CL
3 DA
79 ADR_SEL
I2C
4 CL
5 WS
HDMI_SCK
HDMI_WS
17 CL3
18 WS3
8 IN
9 OUT
10 CL
11 WS
DEL I2S
HDMI_SD
7 16 20 21 DA
6 DA_OUT
SIF
2432 3416 5403 5404 12u 2449 180p
2448 4448
I420
2433 2434 2435 330p
I421 I422 I423
1V5
IN1+ IN- IN2+ ANA
2436 10u 2445 100n
I424 2V6
56 VREFTOP
SC1_AUDIO_IN_R
SC1_AUDIO_IN_L
55 54 R L SC1_IN
SC2_AUDIO_IN_R
SC2_AUDIO_IN_L
53 52 R L SC2_IN
COMP_AUDIO_IN_R
COMP_AUDIO_IN_L
51 50 R L SC3_IN
SIDE_AUDIO_IN_R_CON
SIDE_AUDIO_IN_L_CON
49 48 R L SC4_IN
HDMI_AUDIO_IN_R
HDMI_AUDIO_IN_L
58 57 R L SC5_IN
AGNDC
I425
45
2437 10u
2438 100n
VSS
A AH D
59 60 43 44 14 15
VREF
1 2
35 25
Φ MULTISTANDARD SOUND PROCESSOR
AUD_CL_OUT 70
DACM R L C SUB SR SL
26 0V6
27 0V6
28
29
30
31
AUDIO_LS_R
AUDIO_LS_L
2418 330p
2417 330p
DACA R L
23 0V2
24 0V2
HP_AUDIO_OUT_R
HP_AUDIO_OUT_L
CAPL M A
40 6V7
38 6V3
2420
I414
2423
I415
10u 16V
+8V
2421 330p
2422 330p
DCTR_IO 0 1
78
77
SPDIF_OUT 76
SC1_OUT R L
36 3V8
37 3V8
I416
I417
2424 2425
10u
3417 3418 100R
SC1_AUDIO_OUT_R
SC1_AUDIO_OUT_L
SC2_OUT R L
33 3V8
34 3V8
I418
I419
2426 2427
3419 3420 100R
SC2_AUDIO_OUT_R
SC2_AUDIO_OUT_L
SC3_OUT R L
41
42
2428 100p
2429 100p
2430 100p
2431 100p
NC
1 22 32 46 47 71 72 73 74 75

*	LA	AP	CH
2432	33p	56p	56p
2433	47p	330p	330p
2434	47p	56p	56p
2435	47p	56p	56p
2448	150p	--	--
2449	180p	--	--
3416	2K2	--	--
4448	--	Y	Y
5403	--	22u	22u
5404	12u	--	--

3139 123 6263.1

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1411 B3
2408 A4
2409 A4
2410 A4
2411 A2
2412 A4
2413 A6
2414 B2
2415 B3
2416 B3
2417 B7
2418 B7
2419 C3
2420 C6
2421 C7
2422 C7
2423 C6
2424 D7
2425 D7
2426 D7
2427 D7
2428 D7
2429 D7
2430 D7
2431 D7
2432 D2
2433 D3
2434 D3
2435 E3
2436 E3
2437 F4
2438 F4
2439 A3
2440 A3
2441 A4
2442 A4
2443 A6
2444 A6
2445 E3
2446 C3
2447 C3
2448 E2
2449 E2
3402 A1
3410 C3
3411 C3
3416 D2
3417 D8
3418 D8
3419 D8
3420 D8
4401 A2
4402 A2
4448 E2
5401 A2
5402 B2
5403 E2
5404 E2
7410 A4
7411 B4
F401 A4
F402 A5
F403 A6
I412 C3
I413 C3
I414 C6
I415 C6
I416 D6
I417 D6
I418 D6
I419 D6
I420 D3
I421 D4
I422 D4
I423 E4
I424 E4
I425 F4
I426 A3

SSB: YPBPR & Rear IO

B06A YPBPR & REAR IO

B06A

SVHS

1601-3 GND

1601-1

I633 5 6

F602 1 3 4 2

F615

RES 2600 3604 75R

F601 3600 10R I615 SC2_C_IN

RES 6604 PESD5V0S1BA 1609

CVBS

1601-2 8 7

RES 4602 1612

4601

3609 75R

F603

1608

RES 6606 PESD5V0S1BA

RES 2609

3602 10R I631 SC2_CVBS_Y_IN

3622 1K0 +5V_SW

6608 PESD5V0S1BA

+5V_SW

3623 100K

F604

RES 4605 3613 75R

6615 PESD5V0S1BA

RES 2601

2617 1u0

I632

3624 56K

3625 220R

BC857BW 7601

I637 SC2_Y_CVBS_IN

CVI - 2 (YPbPr)

RED-RIGHT 1615-1 2

PR 3 MSD-246V1-66 NIDIP

F605 1606 RES 6610 PESD5V0S1BA RES 2602 3601 75R 3617 100R HD_PR_IN_ITV HD_PR_IN

F606 1607 RES 6611 PESD5V0S1BA RES 2603 3603 75R 3618 100R HD_Y_IN_ITV HD_Y_IN

RED-BLUE-MIDDLE 1615-2 5 F614

Y 4

PB 6 MSD-246V1-66 NIDIP

F607 1610 RES 6612 PESD5V0S1BA RES 2606 3605 75R 3619 100R HD_PB_IN_ITV HD_PB_IN

WHITE-GREEN-LEFT 1615-3 8

L 7

R 9 MSD-246V1-66 NIDIP

F608 1611 RES 6613 PESD5V0S1BA 3607 150R I623 2608 3n3 3608 33K 2607 220n I610 COMP_AUDIO_IN_L

F609 1613 RES 6614 PESD5V0S1BA 3611 150R I627 2612 3n3 3612 33K 2610 220n I611 COMP_AUDIO_IN_R

ITV Connector D

1619 1 2 3 4 5 6 7 8

HD_PR_IN_ITV HD_Y_IN_ITV HD_PB_IN_ITV

F612 F613 VGA_H VGA_V

BM06B-SRSS-TBT

1603 MSD-242V-01 NIDIP (765A) LF

F616 2 1 L 3 R

F611 3621 150R I635 2615 220n SC2_AUDIO_IN_L

1618 RES 6607 PESD5V0S1BA 3616 33K 2616 3n3

F610 3620 150R I636 2614 220n SC2_AUDIO_IN_R

1614 RES 6605 PESD5V0S1BA 3615 33K 2613 3n3

1601-1 B3
1601-2 D2
1601-3 B3
1603 F2
1606 B8
1607 C8
1608 D3
1609 C3
1610 C8
1611 D8
1612 D2
1613 E8
1614 G3
1615-1 B7
1615-2 C7
1615-3 D7
1618 F3
1619 F7
2600 B4
2601 E3
2602 B9
2603 C9
2606 C9
2607 D10
2608 D9
2609 D4
2610 D10
2612 E9
2613 G4
2614 F5
2615 F5
2616 F4
2617 E3
3600 B4
3601 B9
3602 C5
3603 C9
3604 B4
3605 C9
3607 D9
3608 D10
3609 C3
3611 D9
3612 D10
3613 E2
3615 G4
3616 F4
3617 B10
3618 B10
3619 C10
3620 F4
3621 F4
3622 D6
3623 D4
3624 E4
3625 E5
4601 D2
4602 D3
4605 E2
6604 C4
6605 G4
6606 D4
6607 F4
6608 D6
6610 B8
6611 C8
6612 C8
6613 D8
6614 E8
6615 E2
7601 E5
F601 B4
F602 C3
F603 D3
F604 E2
F605 B8
F606 C8
F607 C8
F608 D8
F609 D8
F610 F4
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F612 F8
F613 F8
F614 C8
F615 C3
F616 F2
I610 D10
I611 D10
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I623 D9
I627 D9
I631 C5
I632 E4
I633 C2
I635 F4
I636 F4
I637 E5

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SSB: I/O Scart 1 & 2

B06B IO - CINCH

B06B

ITV-Connector B

ITV-Connector C

CVI - 1

RESERVED FOR CHINA DTV ONLY

MONITOR OUT

FOR ITV RF MONITOR OUT

PC AUDIO

1226-00B-15S-FAE-02

YKB21-5157N

MSD-246V1-66 NIDIP

ADG733BRU

74HC4053D

BC847B

BC857BW

M24C02-WMN6

EEPROM

H_17260_007.eps
040707

3139 123 6263.1

1M01 B1	3M70 E10	IM57 F9
1M02 H1	3M71 F9	IM58 F9
1M03-1 A5	3M72 F9	IM59 D9
1M03-2 B5	3M73 F11	IM60 D9
1M03-3 C5	3M80 E12	IM61 E9
1M04-1 H9	3M81 E12	IM90 I6
1M04-2 H9	3M82 E12	IM91 I6
1M04-3 I9	3M83 E12	IM93 H6
1M11 B2	3M84 G12	IM94 I7
1M12 C2	3M85 G12	IM95 F10
1M13 D2	3M86 G12	IM96 F10
1M14 F2	3M87 G12	IM97 F10
1M15 G2	3M88 E12	
1M16 I1	3M89 E12	
1M17 I1	3M90 F12	
1M18 A7	3M91 F12	
1M19 B7	3M92 I7	
1M21 C6	3M93 I7	
1M22 D6	3M94 H6	
1M23 H9	3M95 H7	
1M24 I9	4M01 A2	
1M25 A3	4M02 A2	
1M26 A1	4M03 A2	
1M31 B7	4M05 H12	
1M32 I9	4M37 G13	
1R05 D8	4M38 G13	
1R06 F8	4M51 A13	
1R08 C8	4M52 A13	
2M01 B3	4M53 A13	
2M02 C3	4M57 C10	
2M03 D3	4M58 C10	
2M04 D3	4M60 I7	
2M05 F2	5M01 D3	
2M06 F2	5M13 F2	
2M07 E4	5M14 G2	
2M09 F2	5M37 D14	
2M10 G2	5M56 B13	
2M20 H3	5M57 C9	
2M21 I2	5M58 C9	
2M22 I3	6M01 C2	
2M23 I2	6M02 C2	
2M30 A7	6M03 D2	
2M31 B7	6M04 D3	
2M32 B7	6M05 F2	
2M33 C7	6M06 H2	
2M34 C7	6M21 I2	
2M35 D7	6M22 I2	
2M36 D7	6M31 A7	
2M37 E13	6M33 B7	
2M38 E14	6M34 C6	
2M40 H10	6M35 D6	
2M41 H11	6M42 H10	
2M42 H10	6M45 I10	
2M43 I11	6M46 I10	
2M44 I11	7M01 E3	
2M45 I10	7M03 E13	
2M46 I10	7M04 H11	
2M50 A10	7M05 H12	
2M51 B10	7M06 B13	
2M52 B10	7M90 I6	
2M53 C11	7M91 I6	
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2M55 D12	FM02 B2	
2M56 B13	FM03 B2	
2M57 C11	FM04 C2	
2M58 D11	FM05 E4	
2M59 D11	FM06 E3	
2M60 F10	FM07 E3	
2M61 F10	FM08 E3	
2M62 D9	FM09 F1	
2M63 D9	FM10 G1	
2M65 D10	FM13 H1	
2M66 D10	FM14 I1	
2M67 B2	FM15 A6	
2M68 C2	FM16 B6	
2M69 D2	FM17 B6	
2M70 D2	FM18 C6	
2M71 E2	FM19 D6	
2M90 H5	FM20 C9	
2M91 H6	FM21 H9	
3M01 B3	FM22 I9	
3M02 B3	FM23 I9	
3M03 C3	FM24 E9	
3M04 C3	FM25 F9	
3M05 C3	FM92 I7	
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3M07 D2	IM02 A4	
3M08 E2	IM03 B3	
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3M10 E2	IM05 C3	
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3M22 I2	IM17 H3	
3M23 I2	IM18 H3	
3M24 I2	IM19 I3	
3M30 A8	IM20 I3	
3M31 A8	IM21 A9	
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3M35 B8	IM25 B11	
3M36 C7	IM26 B11	
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3M39 D7	IM29 C14	
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3M44 H10	IM33 D11	
3M45 H10	IM34 C12	
3M46 H12	IM35 C12	
3M47 I10	IM36 D12	
3M48 I10	IM37 E13	
3M50 B14	IM38 E14	
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3M61 D12	IM49 H11	
3M62 D12	IM50 H11	
3M63 F9	IM51 H12	
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3M65 E9	IM53 H13	
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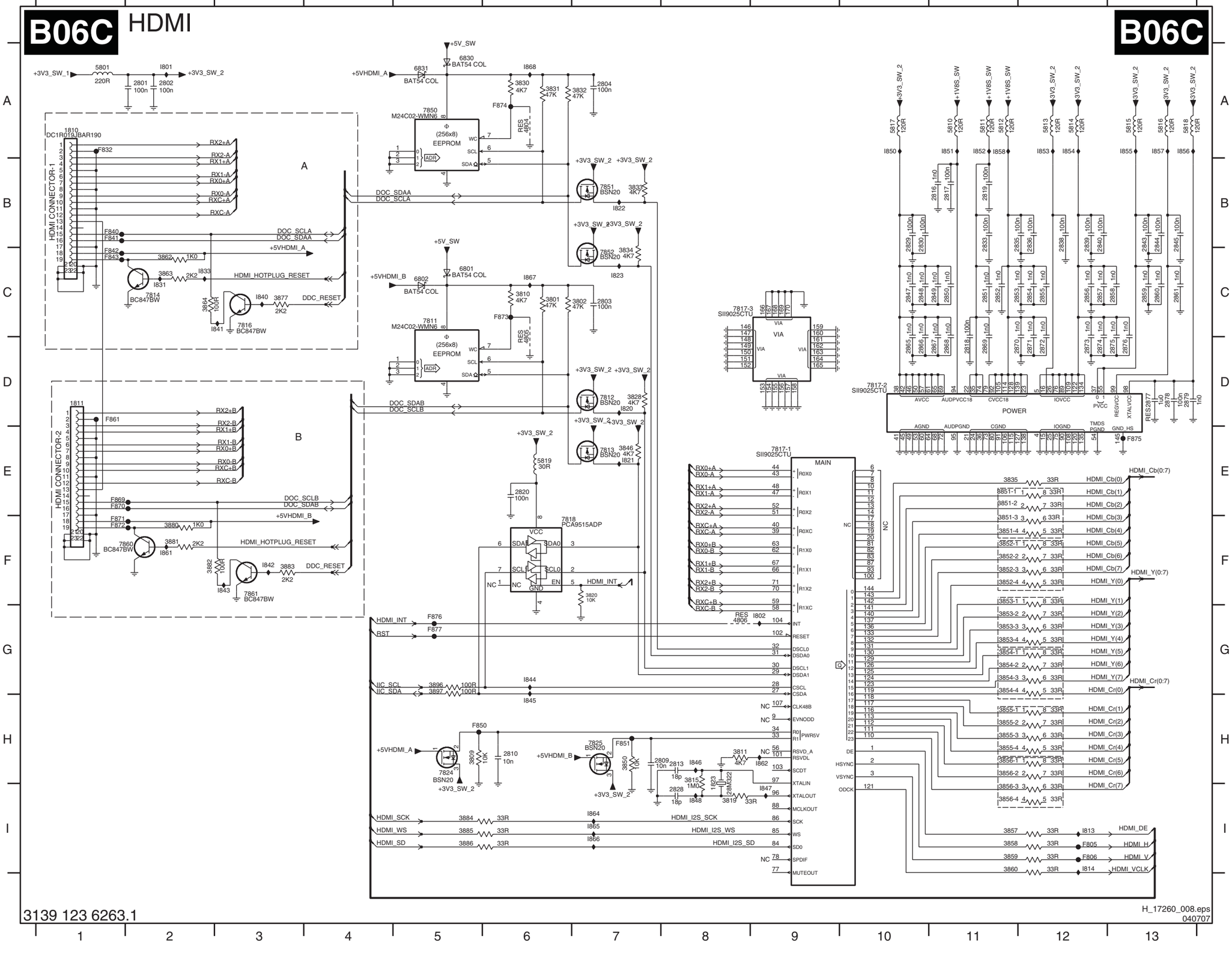
3M69 E10		

SSB: HDMI

B06C HDMI



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2802 A2
2803 C7
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2813 H8
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2817 B11
2818 D11
2819 B11
2820 E6
2828 I8
2829 B10
2830 B10
2833 B11
2835 B12
2836 B12
2838 B12
2839 B12
2840 B12
2843 B13
2844 B13
2845 B13
2847 C10
2848 C10
2849 C11
2850 C11
2851 C11
2852 C11
2853 C12
2854 C12
2855 C12
2856 C12
2857 C12
2858 C13
2859 C13
2860 C13
2861 C13
2865 D10
2866 D10
2867 D11
2868 D11
2869 D11
2870 D12
2871 D12
2872 D12
2873 D12
2874 D12
2875 D13
2876 D13
2877 D13
2878 D13
2879 D13
3801 C6
3802 C7
3809 H5
3810 C6
3811 H8
3815 H8
3819 I8
3820 F7
3828 D7
3830 A6
3831 A6
3832 A7
3833 B7
3834 C7
3835 E11
3846 E7
3850 H7
3851-1 E11
3851-2 E11
3851-3 F11
3851-4 F11
3852-1 F11
3852-2 F11
3852-3 F11
3852-4 F11
3853-1 F11
3853-2 G11
3853-3 G11
3853-4 G11
3854-1 G11
3854-2 G11
3854-3 G11
3854-4 G11
3855-1 H11
3855-2 H11
3855-3 H11
3855-4 H11
3856-1 H11
3856-2 H11
3856-3 I11
3856-4 I11
3857 I11
3858 I11
3859 I11
3860 I11
3862 C2
3863 C2
3864 C2
3877 C3
3880 F2
3881 F2
3882 F2
3883 F3
3884 I5
3885 I5
3886 I5
3896 G5
3897 G5
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5811 A11
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5815 A13
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5818 A13
5819 E6
6801 C5
6802 C5
6830 A5
6831 A5
7811 C5
7812 D7
7813 E7
7814 C2
7816 C3
7817-1 E9
7817-2 D10
7817-3 C9
7818 F6
7824 H5
7825 H7
7850 A5
7851 B7
7852 C7
7860 F2
7861 F3
7868 I2
F805 I12
F806 I12
F832 A1
F840 B1
F841 B1
F842 C1
F843 C1
F850 H5
F851 H7
F861 D1
F869 E1
F870 E1
F871 F1
F872 F1
F873 C6
F874 A6
F875 E13
F876 G5
F877 G5
I801 A2
I802 G9
I813 I12
I814 I12
I820 D7
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I822 B7
I823 C7
I831 C2
I833 C2
I840 C3
I841 C3
I842 F3
I843 F3
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I851 A11
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I855 A13
I856 A13
I857 A13
I858 A11
I861 F2
I862 H9
I864 I7
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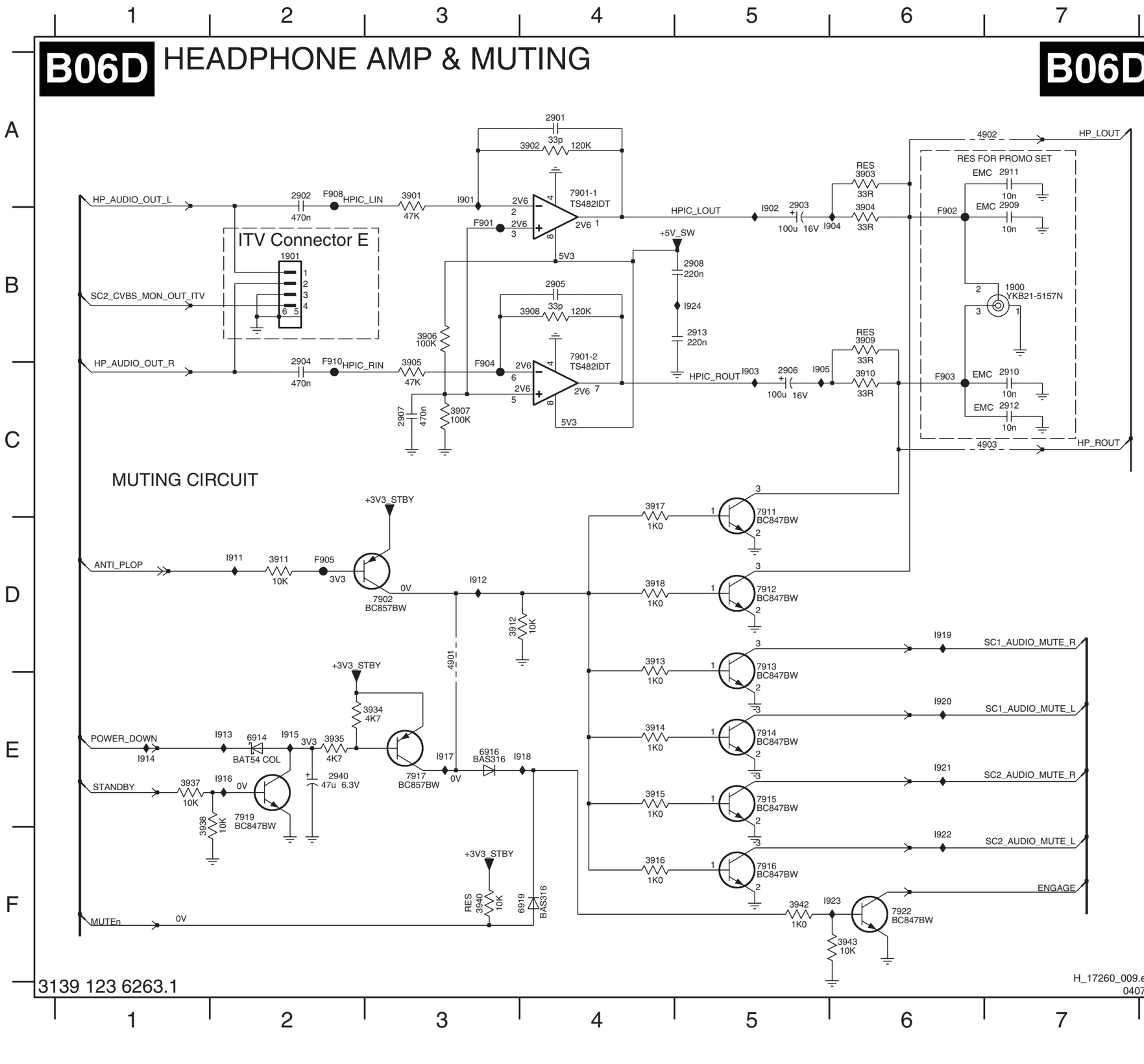
I866 I7
I867 C6
I868 A6

SSB: Headphone Amp & Muting

B06D HEADPHONE AMP & MUTING



3139 123 6263.1

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1901 B2 I915 E2
2901 A4 I916 E2
2902 A2 I917 E3
2903 B5 I918 E4
2904 C2 I919 D6
2905 B4 I920 E6
2906 C5 I921 E6
2907 C3 I922 F6
2908 B5 I923 F6
2909 A7 I924 B5
2910 C7
2911 A7
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3901 A3
3902 A4
3903 A6
3904 B6
3905 C3
3906 B3
3907 C3
3908 B4
3909 B6
3910 C6
3911 D2
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3915 E4
3916 F4
3917 C4
3918 D4
3934 E3
3935 E2
3937 E1
3938 E1
3940 F3
3942 F5
3943 F6
4901 D3
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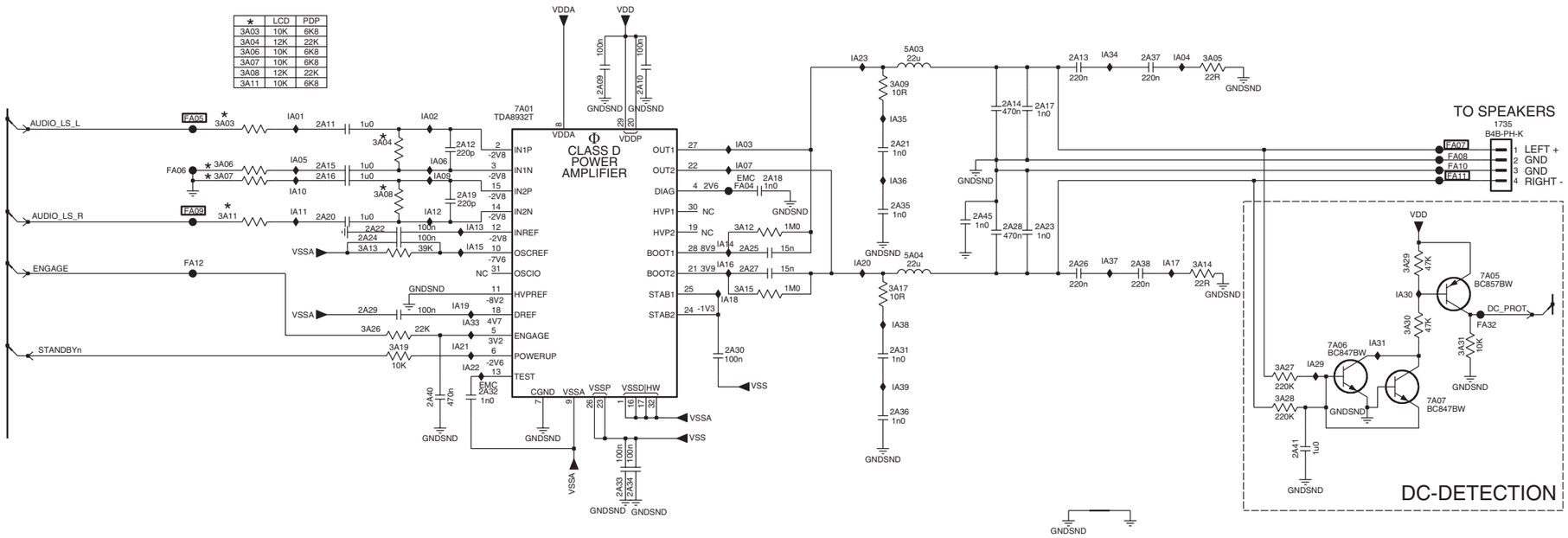
4903 C7
6914 E2
6916 E3
6919 F3
7901-1 A4
7901-2 B4
7902 D3
7911 C5
7912 D5
7913 D5
7914 E5
7915 E5
7916 F5
7917 E3
7919 E2
7922 F6
F901 B3
F902 B6
F903 C6
F904 C3
F905 D2
F908 A2
F910 B2
I901 A3
I902 B5
I903 C5
I904 B6
I905 C5
I911 D2
I912 D3
I913 E2

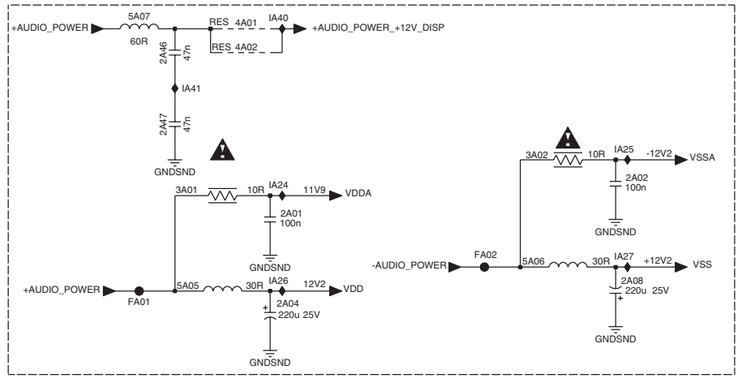
SSB: Audio

B07 AUDIO

B07

*	LCD	PDP
3A03	10K	6K8
3A04	12K	22K
3A06	10K	6K8
3A07	10K	6K8
3A08	12K	22K
3A11	10K	6K8





3139 123 6263.1

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1735 D12 IA21 E4
2A01 B7 IA22 F5
2A02 B9 IA23 C7
2A04 B7 IA24 B7
2A08 B9 IA25 B9
2A09 D5 IA26 B7
2A10 D6 IA27 B9
2A11 D3 IA29 F10
2A12 D4 IA30 E11
2A13 C9 IA31 E11
2A14 D8 IA33 E5
2A15 D3 IA34 C9
2A16 D3 IA35 D7
2A17 D8 IA36 D7
2A18 D7 IA37 E9
2A19 D4 IA38 E7
2A20 E3 IA39 F7
2A21 D7 IA40 A7
2A22 E4 IA41 A7
2A23 E8
2A24 E4
2A25 E6
2A26 E9
2A27 E6
2A28 E8
2A29 E4
2A30 E6
2A31 E7
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2A33 F6
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2A40 F4
2A41 F10
2A45 D8
2A46 A7
2A47 A7
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3A14 E10
3A15 E6
3A17 E7
3A19 E4
3A26 E4
3A27 F10
3A28 F10
3A29 E11
3A30 E11
3A31 E11
4A01 A7
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5A03 C8
5A04 E8
5A05 B7
5A06 B9
5A07 A6
7A01 D5
7A05 E12
7A06 E10
7A07 F11
FA01 B6
FA02 B9
FA04 D6
FA05 D3
FA06 D2
FA07 D11
FA08 D11
FA09 D3
FA10 D11
FA11 D11
FA12 E3
FA32 E12
IA01 D3
IA02 D4
IA03 D6
IA04 C9
IA05 D3
IA06 D4
IA07 D6
IA09 D4
IA10 D3
IA11 D3
IA12 D4
IA13 E5
IA14 E6
IA15 E5
IA16 E6
IA17 E9
IA18 E6
IA19 E4
IA20 E7

SSB: SRP List

1.1. Introduction

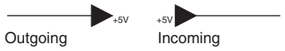
SRP (Service Reference Protocol) is a software tool that creates a list with all references to signal lines. The list contains references to the signals within all schematics of a PWB. It replaces the text references currently printed next to the signal names in the schematics. These printed references are created manually and are therefore not guaranteed to be 100% correct. In addition, in the current crowded schematics there is often none or very little place for these references.
Some of the PWB schematics will use SRP while others will still use the manual references. Either there will be an SRP reference list for a schematic, or there will be printed references in the schematic.

1.2. Non-SRP Schematics

There are several different signals available in a schematic:

1.2.1. Power Supply Lines

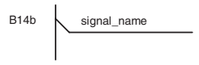
All power supply lines are available in the supply line overview (see chapter 6). In the schematics (see chapter 7) is not indicated where supplies are coming from or going to.
It is however indicated if a supply is incoming (created elsewhere), or outgoing (created or adapted in the current schematic).



Outgoing Incoming

1.2.2. Normal Signals

For normal signals, a schematic reference (e.g. B14b) is placed next to the signals.

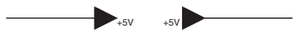


1.2.3. Grounds

For normal and special grounds (e.g. GNDHOT or GND3V3 etc.), nothing is indicated.

1.3. SRP Schematics

SRP is a tool, which automatically creates a list with signal references, indicating on which schematic the signals are used.
A reference is created for all signals indicated with an SRP symbol, these symbols are:

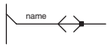


Power supply line.

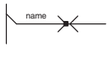
Stand alone signal or switching line (used as less as possible).

Signal line into a wire tree.

Switching line into a wire tree.



Bi-directional line (e.g. SDA) into a wire tree.



Signal line into a wire tree, its direction depends on the circuit (e.g. ingoing for PDP, outgoing for LCD sets).

Remarks:

- When there is a black dot on the "signal direction arrow" it is an SRP symbol, so there will be a reference to the signal name in the SRP list.
- All references to normal grounds (Ground symbols without additional text) are not listed in the reference list, this to keep it concise.
- Signals that are not used in multiple schematics, but only once or several times in the same schematic, are included in the SRP reference list, but only with one reference.

Additional Tip:

When using the PDF service manual file, you can very easily search for signal names and follow the signal over all the schematics. In Adobe PDF reader:

- Select the signal name you want to search for, with the "Select text" tool.
- Copy and paste the signal name in the "Search PDF" tool.
- Search for all occurrences of the signal name.
- Now you can quickly jump between the different occurrences and follow the signal over all schematics. It is advised to "zoom in" to e.g. 150% to see clearly, which text is selected. Then you can zoom out, to get an overview of the complete schematic.

PS. It is recommended to use at least Adobe PDF (reader) version 6.x, due to better search possibilities in this version.

3104 313 6263.1

Netname	Schematic
+12V_DISP	B02 (1x)
+12V_DISP	B03A (1x)
+12V_DISP	B04A (2x)
+12V_DISP	B04B (1x)
+12V_DISP	B04C (1x)
+1V8S_SW	B02 (1x)
+1V8S_SW	B04B (3x)
+1V8S_SW	B06C (3x)
+3V3_STBY	B02 (1x)
+3V3_STBY	B04A (33x)
+3V3_STBY	B06D (3x)
+3V3_SW	B02 (1x)
+3V3_SW	B03A (1x)
+3V3_SW	B04A (8x)
+3V3_SW	B04B (11x)
+3V3_SW_1	B03A (3x)
+3V3_SW_1	B06C (1x)
+3V3_SW_2	B06C (18x)
+5V_AUD	B04C (3x)
+5V_D	B04C (2x)
+5V_IF	B03A (5x)
+5V_STANDBY	B02 (4x)
+5V_STANDBY	B04A (4x)
+5V_STANDBY	B04B (2x)
+5V_SW	B02 (4x)
+5V_SW	B03A (2x)
+5V_SW	B04A (1x)
+5V_SW	B04B (2x)
+5V_SW	B04C (1x)
+5V_SW	B06A (2x)
+5V_SW	B06B (12x)
+5V_SW	B06C (2x)
+5V_SW	B06D (1x)
+5VHDMI_A	B06C (3x)
+5VHDMI_B	B06C (3x)
+5VS	B03A (3x)
+8V	B04C (2x)
+AUDIO_POWER	B02 (1x)
+AUDIO_POWER	B07 (2x)
+AUDIO_POWER_+12V_DISP	B04C (1x)
+AUDIO_POWER_+12V_DISP	B07 (1x)
+VTUN	B02 (1x)
+VTUN	B03A (1x)
A(0)	B04A (1x)
A(0)	B04B (1x)
A(0:7)	B04A (1x)
A(0:7)	B04B (1x)
A(1)	B04A (2x)
A(1)	B04B (1x)
A(1:7)	B04A (1x)
A(10)	B04A (2x)
A(11)	B04A (2x)
A(12)	B04A (2x)
A(13)	B04A (2x)
A(14)	B04A (2x)
A(15)	B04A (2x)
A(16)	B04A (2x)
A(17)	B04A (2x)
A(18)	B04A (2x)
A(19)	B04A (2x)
A(2)	B04A (2x)
A(2)	B04B (1x)
A(3)	B04A (2x)
A(3)	B04B (1x)
A(4)	B04A (2x)
A(4)	B04B (1x)
A(5)	B04A (2x)
A(5)	B04B (1x)
A(6)	B04A (2x)
A(6)	B04B (1x)
A(7)	B04A (2x)
A(7)	B04B (1x)
A(8)	B04A (2x)
A(8:19)	B04A (2x)
A(9)	B04A (2x)
AD(0)	B04A (2x)
AD(0)	B04B (1x)
AD(0:7)	B04A (2x)
AD(0:7)	B04B (1x)
AD(1)	B04A (2x)
AD(1)	B04B (1x)
AD(2)	B04A (2x)
AD(2)	B04B (1x)
AD(3)	B04A (2x)
AD(3)	B04B (1x)
AD(4)	B04A (2x)
AD(4)	B04B (1x)
AD(5)	B04A (2x)
AD(5)	B04B (1x)
AD(6)	B04A (2x)
AD(6)	B04B (1x)
AD(7)	B04A (2x)
AD(7)	B04B (1x)
ALE_EMU	B04A (1x)
ALE_EMU	B04B (1x)
ANTI_PLOP	B04A (1x)
ANTI_PLOP	B06D (1x)
AUDIO_LS_L	B04C (1x)
AUDIO_LS_L	B07 (1x)
AUDIO_LS_R	B04C (1x)
AUDIO_LS_R	B07 (1x)
-AUDIO_POWER	B02 (1x)
-AUDIO_POWER	B07 (1x)
BACKLIGHT_BOOST	B02 (1x)
BACKLIGHT_BOOST	B04A (1x)
BL_ADJUST	B02 (1x)
BL_ADJUST	B04A (1x)
BL_ADJUST	B04B (1x)
BL_ON_OFF	B02 (1x)
BL_ON_OFF	B04A (1x)
BOLT_ON_SCL	B04A (2x)
BOLT_ON_SCL	B04B (1x)
BOLT_ON_SDA	B04A (2x)
BOLT_ON_SDA	B04B (1x)
CE	B04A (1x)
COMP_AUDIO_IN_L	B04C (1x)
COMP_AUDIO_IN_L	B06A (1x)
COMP_AUDIO_IN_R	B04C (1x)
COMP_AUDIO_IN_R	B06A (1x)
CPU_RST	B04A (1x)
CS	B04A (1x)
CS	B04B (1x)
CTRL_DISP1	B04B (2x)
CTRL_DISP1_up	B04A (1x)
CTRL_DISP1_up	B04B (1x)
CTRL_DISP2	B04B (2x)
CTRL_DISP3	B04B (2x)
CTRL_DISP4	B04B (2x)
CTRL_DISP4_up	B04A (1x)
CTRL_DISP4_up	B04B (1x)
CVBS_RF	B03A (1x)
CVBS_RF	B04B (1x)
CVI_DTV_SEL	B04A (1x)
CVI_DTV_SEL	B06B (1x)
CVI2_L	B06B (1x)
CVI2_R	B06B (1x)
CX_AVDD_ADC1	B04B (2x)
CX_AVDD_ADC2	B04B (2x)
CX_AVDD_ADC3	B04B (2x)
CX_AVDD_ADC4	B04B (2x)
CX_AVDD3_ADC1	B04B (2x)
CX_AVDD3_ADC2	B04B (2x)
CX_AVDD3_BG_ASS	B04B (2x)
CX_AVDD3_OUTBUF	B04B (2x)
CX_PAVDD	B04B (2x)
CX_PAVDD1	B04B (2x)
CX_PAVDD2	B04B (2x)
CX_PDVDD	B04B (2x)
DC_5V	B06B (3x)
DC_PROT	B04A (1x)
DC_PROT	B07 (1x)
DDC_RESET	B04A (1x)
DDC_RESET	B06C (2x)
E_PAGE	B04A (1x)
ENGAGE	B06D (1x)
ENGAGE	B07 (1x)
ESD_INT	B04A (1x)
ESD_INT	B04B (1x)
ESD_RST	B04A (1x)
ESD_RST	B04B (1x)
FRONT_C_IN_T	B04A (1x)
FRONT_C_IN_T	B04B (1x)
FRONT_Y_CVBS_IN_T	B04A (1x)
FRONT_Y_CVBS_IN_T	B04B (1x)
GNDDC	B02 (1x)
GNDSND	B02 (3x)
GNDSND	B07 (22x)
GNDTUN	B02 (1x)
HD_PB_IN	B04B (1x)
HD_PB_IN	B06A (1x)
HD_PB_IN_ITV	B06A (2x)
HD_PR_IN	B04B (1x)
HD_PR_IN	B06A (1x)
HD_PR_IN_ITV	B06A (2x)
HD_Y_IN	B04B (1x)
HD_Y_IN	B06A (1x)
HD_Y_IN_ITV	B06A (2x)
HDMI_AUDIO_IN_L	B04C (1x)
HDMI_AUDIO_IN_L	B06B (1x)
HDMI_AUDIO_IN_R	B04C (1x)
HDMI_AUDIO_IN_R	B06B (1x)
HDMI_Cb(0)	B04B (1x)
HDMI_Cb(0)	B06C (1x)
HDMI_Cb(0:7)	B04B (1x)
HDMI_Cb(0:7)	B06C (1x)
HDMI_Cb(1)	B04B (1x)
HDMI_Cb(1)	B06C (1x)
HDMI_Cb(2)	B04B (1x)
HDMI_Cb(2)	B06C (1x)
HDMI_Cb(3)	B04B (1x)
HDMI_Cb(3)	B06C (1x)
HDMI_Cb(4)	B04B (1x)
HDMI_Cb(4)	B06C (1x)
HDMI_Cb(5)	B04B (1x)
HDMI_Cb(5)	B06C (1x)
HDMI_Cb(6)	B04B (1x)
HDMI_Cb(6)	B06C (1x)
HDMI_Cb(7)	B04B (1x)
HDMI_Cb(7)	B06C (1x)
HDMI_Cr(0)	B04B (1x)
HDMI_Cr(0)	B06C (1x)
HDMI_Cr(0:7)	B04B (1x)
HDMI_Cr(0:7)	B06C (1x)
HDMI_Cr(1)	B04B (1x)
HDMI_Cr(1)	B06C (1x)
HDMI_Cr(2)	B04B (1x)
HDMI_Cr(2)	B06C (1x)
HDMI_Cr(3)	B04B (1x)
HDMI_Cr(3)	B06C (1x)
HDMI_Cr(4)	B04B (1x)
HDMI_Cr(4)	B06C (1x)
HDMI_Cr(5)	B04B (1x)
HDMI_Cr(5)	B06C (1x)
HDMI_Cr(6)	B04B (1x)
HDMI_Cr(6)	B06C (1x)
HDMI_Cr(7)	B04B (1x)
HDMI_Cr(7)	B06C (1x)
HDMI_DE	B04B (1x)
HDMI_DE	B06C (1x)
HDMI_H	B04B (1x)
HDMI_H	B06C (1x)
HDMI_HOTPLUG_RESET	B04A (1x)
HDMI_HOTPLUG_RESET	B06C (2x)
HDMI_INT	B04A (1x)
HDMI_INT	B06C (2x)
HDMI_SCK	B04C (1x)
HDMI_SCK	B06C (1x)
HDMI_SD	B04C (1x)
HDMI_SD	B06C (1x)
HDMI_V	B04B (1x)
HDMI_V	B06C (1x)
HDMI_VCLK	B04B (1x)
HDMI_VCLK	B06C (1x)
HDMI_WS	B04C (1x)
HDMI_WS	B06C (1x)
HDMI_Y(0)	B04B (1x)
HDMI_Y(0)	B06C (1x)
HDMI_Y(0:7)	B04B (1x)
HDMI_Y(0:7)	B06C (1x)
HDMI_Y(1)	B04B (1x)
HDMI_Y(1)	B06C (1x)
HDMI_Y(2)	B04B (1x)
HDMI_Y(2)	B06C (1x)
HDMI_Y(3)	B04B (1x)
HDMI_Y(3)	B06C (1x)
HDMI_Y(4)	B04B (1x)
HDMI_Y(4)	B06C (1x)
HDMI_Y(5)	B04B (1x)
HDMI_Y(5)	B06C (1x)
HDMI_Y(6)	B04B (1x)
HDMI_Y(6)	B06C (1x)
HDMI_Y(7)	B04B (1x)
HDMI_Y(7)	B06C (1x)
HP_AUDIO_OUT_L	B04C (1x)
HP_AUDIO_OUT_L	B06D (1x)
HP_AUDIO_OUT_R	B04C (1x)
HP_AUDIO_OUT_R	B06D (1x)
HP_LOUT	B04A (1x)
HP_LOUT	B06D (1x)
HP_ROUT	B04A (1x)
HP_ROUT	B06D (1x)
IBO_B_IN	B04B (1x)
IBO_B_IN	B06B (1x)
IBO_G_IN	B04B (1x)
IBO_G_IN	B06B (1x)
IBO_IRQ	B04A (1x)
IBO_IRQ	B06B (1x)
IBO_R_IN	B04B (1x)
IBO_R_IN	B06B (1x)
IIC_SCL	B03A (2x)
IIC_SCL	B04A (1x)
IIC_SCL	B04B (1x)
IIC_SCL	B04C (1x)
IIC_SCL	B06B (1x)
IIC_SCL	B06C (1x)
IIC_SCL_up	B04A (2x)
IIC_SDA	B03A (2x)
IIC_SDA	B04A (1x)
IIC_SDA	B04B (1x)
IIC_SDA	B04C (1x)
IIC_SDA	B06B (1x)
IIC_SDA	B06C (1x)
IIC_SDA_up	B04A (2x)
INT	B04A (1x)
INT	B04B (1x)
ISP	B04A (1x)
ITV_SPI_CLK	B04A (2x)
ITV_SPI_DATA_IN	B04A (2x)
KEYB	B04A (2x)
LCD_PWR_ON	B04A (1x)
LCD_PWR_ON	B04B (1x)
LED1	B04A (2x)
LED2	B04A (2x)
LIGHT_SENSOR	B04A (2x)
MUTEn	B04A (1x)
MUTEn	B06D (1x)
POWER_DOWN	B02 (1x)
POWER_DOWN	B04A (1x)
POWER_DOWN	B06D (1x)
RD	B04A (1x)
RD	B04B (1x)
REMOTE	B04A (3x)
RESET_n	B04A (1x)
RESET_n	B06B (1x)
RF_AGC	B03A (2x)
RST	B04A (1x)
RST	B06C (1x)
RST_AUD	B04A (1x)
RST_AUD	B04C (1x)
RST_H	B04A (1x)
RST_H	B04B (1x)
SAW_SW	B03A (1x)
SAW_SW	B04A (1x)
SC1_AUDIO_IN_L	B04C (1x)
SC1_AUDIO_IN_L	B06B (1x)
SC1_AUDIO_IN_R	B04C (1x)
SC1_AUDIO_IN_R	B06B (1x)
SC1_AUDIO_MUTE_L	B06B (1x)
SC1_AUDIO_MUTE_L	B06D (1x)
SC1_AUDIO_MUTE_R	B06B (1x)
SC1_AUDIO_MUTE_R	B06D (1x)
SC1_AUDIO_OUT_L	B04C (1x)
SC1_AUDIO_OUT_L	B06B (1x)
SC1_AUDIO_OUT_R	B04C (1x)
SC1_AUDIO_OUT_R	B06B (1x)
SC1_B_IN	B04B (1x)
SC1_B_IN	B06B (1x)
SC1_CVBS_IN	B04B (1x)
SC1_CVBS_RF_OUT	B04A (1x)
SC1_CVBS_RF_OUT	B06B (1x)
SC1_FBL_IN	B04B (1x)
SC1_FBL_IN	B06B (1x)
SC1_G_IN	B04B (1x)
SC1_G_IN	B06B (1x)
SC1_R_IN	B04B (1x)
SC1_R_IN	B06B (1x)
SC1_RF_OUT_CVBS	B04B (1x)
SC1_RF_OUT_CVBS	B06B (1x)
SC2_AUDIO_IN_L	B04C (1x)
SC2_AUDIO_IN_L	B06A (1x)
SC2_AUDIO_IN_L	B06B (1x)
SC2_AUDIO_IN_R	B04C (1x)
SC2_AUDIO_IN_R	B06A (1x)
SC2_AUDIO_IN_R	B06B (1x)
SC2_AUDIO_MUTE_L	B06B (1x)
SC2_AUDIO_MUTE_L	B06D (1x)
SC2_AUDIO_MUTE_R	B06B (1x)
SC2_AUDIO_MUTE_R	B06D (1x)
SC2_AUDIO_OUT_L	B04C (1x)
SC2_AUDIO_OUT_L	B06B (1x)
SC2_AUDIO_OUT_R	B04C (1x)
SC2_AUDIO_OUT_R	B06B (1x)
SC2_C_IN	B04B (1x)
SC2_C_IN	B06A (1x)
SC2_C_IN	B06B (1x)
SC2_CVBS_MON_OUT	B04B (1x)
SC2_CVBS_MON_OUT	B06B (1x)
SC2_CVBS_MON_OUT_ITV	B06B (1x)
SC2_CVBS_MON_OUT_ITV	B06D (1x)
SC2_CVBS_Y_IN	B04B (1x)
SC2_CVBS_Y_IN	B06A (1x)
SC2_Y_CVBS_IN	B06A (1x)
SC2_Y_CVBS_IN	B06B (1x)
SIDE_AUDIO_IN_L_CON	B04A (1x)
SIDE_AUDIO_IN_L_CON	B04C (1x)
SIDE_AUDIO_IN_R_CON	B04A (1x)
SIDE_AUDIO_IN_R_CON	B04C (1x)
SIF	B03A (1x)
SIF	B04C (1x)
SIF1	B03A (2x)
SIF2	B03A (2x)
STANDBY	B02 (2x)
STANDBY	B04A (2x)
STANDBY	B06D (1x)
STANDBYn	B04A (1x)
STANDBYn	B04B (1x)
STANDBYn	B07 (1x)
TXAn	B04B (2x)
TXAp	B04B (2x)
TXBn	B04B (2x)
TXBp	B04B (2x)
TXCLKn	B04B (2x)
TXCLKp	B04B (2x)
TXCn	B04B (2x)
TXCp	B04B (2x)
TXDn	B04B (2x)
TXDp	B04B (2x)
VDD	B07 (3x)
VDDA	B07 (2x)
VDISP	B04B (2x)
VGA_H	B04B (1x)
VGA_H	B06A (1x)
VGA_H	B06B (1x)
VGA_V	B04B (1x)
VGA_V	B06A (1x)
VGA_V	B06B (1x)
VIF1	B03A (2x)
VIF2	B03A (2x)
VSS	B07 (3x)
VSSA	B07 (5x)
WR	B04A (1x)
WR	B04B (1x)

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Layout Small Signal Board (Overview Top Side)

1104 D6 1306 A8 1609 F6 1900 B9 1M18 F2 2128 D6 2211 C6 2255 D7 2277 D7 2331 A8 2412 C8 2435 C8 2448 C8 2828 E8 2A04 B9 2A20 B8 2A40 A9 2B22 A3 2L23 A8 2M07 E9 2M55 E3 3135 D6 3225 A7 3266 C6 3344 B6 3383 A7 3411 C8 3624 F6 3852 E7 3896 E7 3A05 A9 3A31 A9 3L09 B6 3M11 E9 3M55 E2 6604 F6
1160 E3 1307 A8 1610 F9 1901 B10 1M19 F1 2134 D6 2212 C6 2256 D7 2283 A7 2332 A8 2413 C8 2436 C8 2449 C8 2901 B9 2A08 A9 2A22 B9 2A41 A9 2B24 A2 2L24 A9 2M10 C9 2M56 E2 3173 D5 3226 A7 3268 C6 3350 B6 3384 B7 3416 C8 3625 E6 3853 E7 3897 E7 3A06 A8 3B10 B3 3L10 A8 3M12 E9 3M56 E2 6605 F6
1161 E6 1308 A8 1611 F9 1B11 A2 1M20 A8 2135 D6 2214 C6 2257 D7 2285 A7 2333 A8 2414 C8 2437 C8 2600 F6 2902 B9 2A09 A9 2A23 A10 2B10 B4 2B25 C4 2L25 A9 2M20 C9 2M57 D2 3178 D6 3227 A8 3271 C6 3351 B6 3386 B6 3600 F6 3809 F7 3854 E8 3901 B9 3A07 B8 3B11 A3 3L12 B6 3M18 C9 3M58 D2 6606 F6
1162 E6 1309 A8 1612 F6 1C01 A3 1M21 F1 2138 D6 2215 C6 2259 D7 2311 A8 2334 A8 2417 C8 2438 C8 2601 F6 2903 B9 2A10 B9 2A24 B9 2B11 B4 2C55 A3 2L26 A9 2M21 C9 2M58 D2 3201 B7 3229 D7 3272 D6 3352 B6 3387 B6 3602 F6 3811 E8 3855 E8 3902 B9 3A08 B9 3B12 A3 3L13 B6 3M20 C9 3M59 E2 6607 F6
1201 D7 1310 A8 1613 F10 1G50 A7 1M22 F2 2143 D6 2242 C6 2260 D7 2314 B6 2335 A8 2418 C8 2439 B8 2609 F6 2906 B9 2A11 A9 2A26 A10 2B12 B5 2C56 A3 2L27 A9 2M22 C9 2M59 D2 3202 B7 3231 D7 3304 B6 3354 B7 3388 B6 3604 F6 3815 E8 3856 E8 3903 B9 3A11 B8 3B13 B5 3L16 A8 3M21 C9 3M59 E2 6608 F6
1210 A7 1311 A5 1614 F6 1G51 A7 1M25 F9 2144 D6 2243 C6 2261 D7 2315 A6 2336 A8 2419 C8 2440 B8 2613 E6 2907 B9 2A12 A9 2A28 A10 2B13 B4 2C57 A3 2L28 A9 2M23 C9 2M60 D1 3203 B7 3232 D7 3319 A6 3356 B7 3389 A8 3609 F6 3819 E8 3857 E8 3904 B9 3A13 B9 3B14 A3 3L20 A8 3M22 C9 3M60 E2 6615 E6
1211 A7 1312 B5 1615 F9 1M01 D8 1M26 F9 2158 C3 2246 D7 2262 A7 2316 B6 2337 A8 2420 B8 2441 C8 2614 E6 2909 B10 2A13 A10 2B14 A3 2C58 A5 2L29 A9 2M37 E1 2M61 D2 3204 B7 3233 A8 3325 A6 3361 B6 3390 A8 3613 F6 3828 E7 3858 E8 3907 B9 3A14 A10 3B15 B5 3L21 A9 3M23 C9 3M61 E3 6B01 B3
1212 A7 1315 A8 1618 F6 1M02 C9 1M31 F2 2159 C4 2247 D7 2263 A7 2317 B6 2339 A8 2421 C8 2442 C8 2615 F6 2910 B10 2A14 A10 2B15 A3 2C59 A4 2L30 A9 2M38 E1 2M62 D1 3212 B7 3235 A8 3327 A6 3365 B6 3391 A8 3615 E6 3833 E7 3859 E8 3909 B10 3A19 A9 3B17 A3 3L22 A9 3M24 C9 3M62 E3 6B02 B5
1213 A7 1601 F6 1619 F10 1M03 F2 1P11 A5 2170 D5 2250 D7 2264 A7 2319 B8 2340 A8 2422 C8 2443 C8 2616 F6 2911 B10 2A15 A8 2B16 B3 2C60 A3 2L31 A9 2M50 E3 2M63 D1 3213 A6 3238 A8 3328 B8 3366 B6 3392 A8 3616 F6 3834 E7 3860 E7 3910 B10 3A26 A8 3B18 A3 3L23 A9 3M50 E2 6B03 B5
1214 A7 1603 F6 1735 A10 1M04 D10 1R05 D3 2171 D6 2251 D7 2265 A7 2327 A8 2408 B8 2423 B8 2444 C7 2617 F6 2912 B10 2A16 B8 2A33 A9 2B18 C5 2C61 A3 2L32 A9 2M51 E2 2M65 D2 3215 B7 3239 D6 3329 A6 3367 B6 3398 A7 3620 F6 3835 E7 3862 F7 3A01 A9 3A27 A9 3B19 A3 3L24 A9 3M51 E3 6M06 C8
1301 B6 1606 F10 1810 F7 1M15 C9 1R06 D2 2172 D6 2252 D7 2267 D7 2328 A8 2409 B8 2432 C8 2445 C8 2809 F7 2940 C10 2A17 A10 2A34 A9 2B19 B5 2L21 A8 2M05 E9 2M52 E2 2M66 D2 3216 A6 3240 D7 3330 A8 3371 B7 3399 A7 3621 F6 3846 E7 3863 F7 3A02 A9 3A28 A9 3L06 B6 3L25 A9 3M52 E3 6M21 C9
1304 A9 1607 F9 1811 F8 1M16 C9 1R08 D1 2208 A6 2253 D7 2268 D6 2329 A8 2410 B8 2433 C8 2446 C8 2810 F7 2A01 A9 2A18 A9 2A37 A10 2B20 B5 2L21 A8 2M05 E9 2M53 E2 3125 D6 3223 A7 3246 A7 3336 B8 3373 B7 3402 C8 3622 F6 3850 F7 3880 F8 3A03 A8 3A29 A9 3L07 B6 3L26 B6 3M53 E2 6M22 C9
1305 A8 1608 F6 1823 E8 1M17 C9 2127 D6 2209 A6 2254 D7 2273 D6 2330 A8 2411 C8 2434 C8 2447 C8 2813 E8 2A02 A9 2A19 B9 2A38 A10 2B21 D5 2L22 A8 2M06 E9 2M54 E2 3126 D6 3224 A7 3247 A7 3337 A8 3381 B7 3410 C8 3623 E6 3851 E7 3881 F8 3A04 A9 3A30 A9 3L08 A6 3M10 E9 3M54 E2 6607 F6

3M67 D2 7113 D6
3M68 D2 7114 D6
3M69 D2 7202 C7
3M70 D2 7207 A6
3M71 D2 7311 B7
3M72 D1 7312 A6
3M73 D2 7313 A8
3M80 E1 7316 A7
3M81 E2 7410 B8
3M82 E1 7601 F6
3M83 E2 7812 E7
3M84 E1 7813 E7
3M85 E2 7814 F7
3M86 E1 7817 E7
3M87 E2 7824 F7
3M88 E1 7825 F7
3M89 E1 7851 E7
3M90 E2 7852 E7
3M91 E2 7860 F8
4124 D6 7A01 A9
4162 E6 7A05 A9
4164 E6 7A06 A9
4166 E6 7A07 A9
4174 E6 7B01 B3
4203 A6 7B03 B5
4204 A6 7B04 C4
4205 A6 7B05 A3
4206 A6 7M01 E9
4214 A6 7M03 E1
4215 A6 7M06 E2
4301 B6
4302 A8
4303 A8
4308 B7
4309 A8
4310 A8
4314 B6
4315 B6
4326 A8
4401 A8
4402 A8
4448 C8
4601 F6
4602 F6
4605 F7
4806 E8
4902 B9
4903 B9
4B01 B4
4C01 A5
4C55 A3
4C56 A3
4C57 A4
4C58 A4
4C59 A4
4C60 A4
4C61 A3
4C62 A3
4L06 A5
4L07 B5
4L08 A5
4L09 A5
4L20 A8
4L21 A9
4L24 A9
4L25 A9
4M01 E8
4M02 E8
4M03 E9
4M37 E1
4M38 E2
4M57 D1
4M58 D1
5116 D6
5159 D4
5162 E6
5165 E6
5167 D6
5210 C6
5302 A8
5304 A8
5401 C8
5402 C8
5403 C8
5404 C8
5A03 A10
5A04 B10
5A05 A9
5A06 A9
5B01 B3
5B02 B4
5B03 B3
5B04 B5
5B05 B4
5B06 A5
5B10 A4
5B11 A5
5B12 A5
5B13 A4
5M14 C9
5M37 E1
5M56 E2
5M57 D1
5M58 D1
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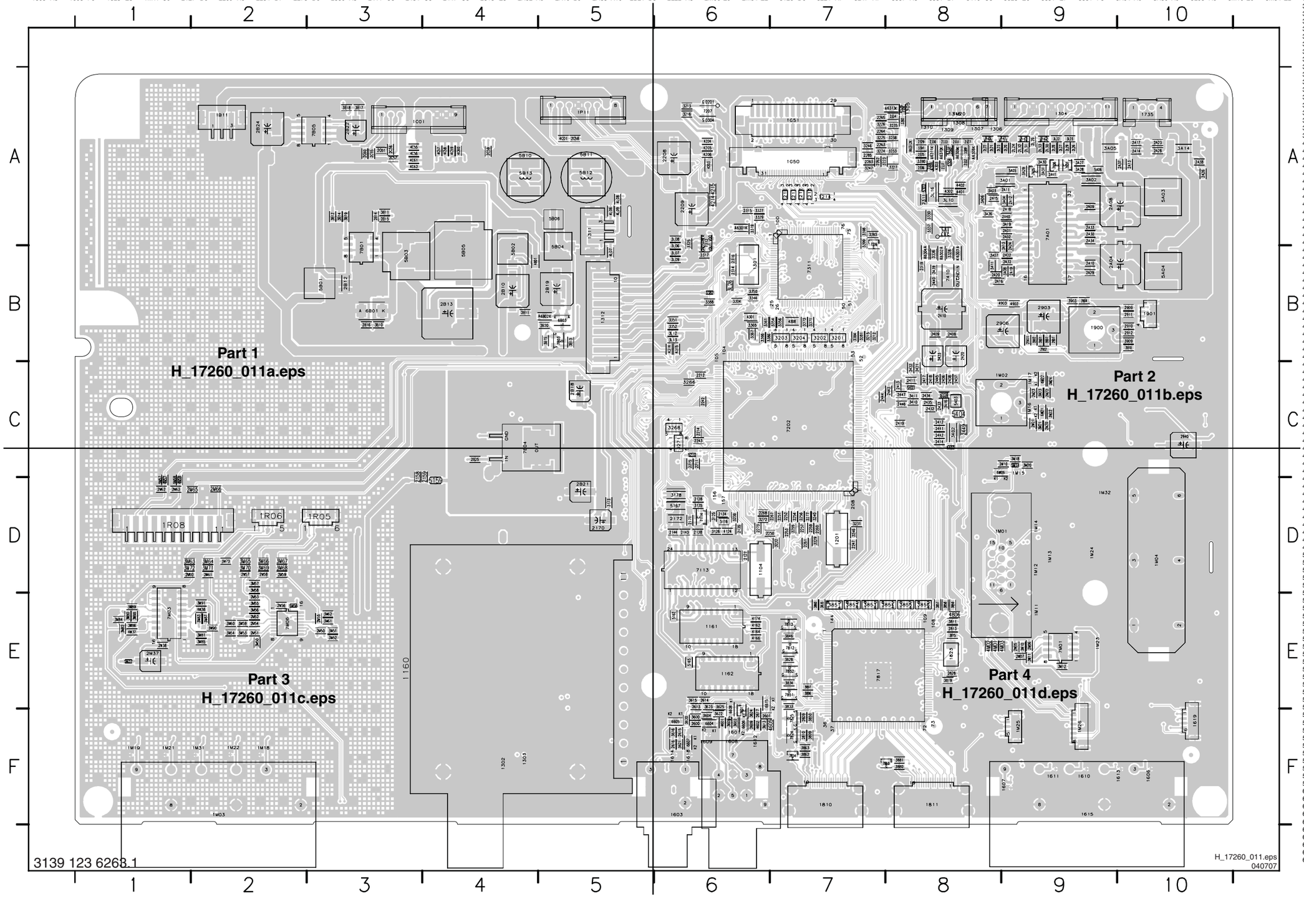
6313 A8



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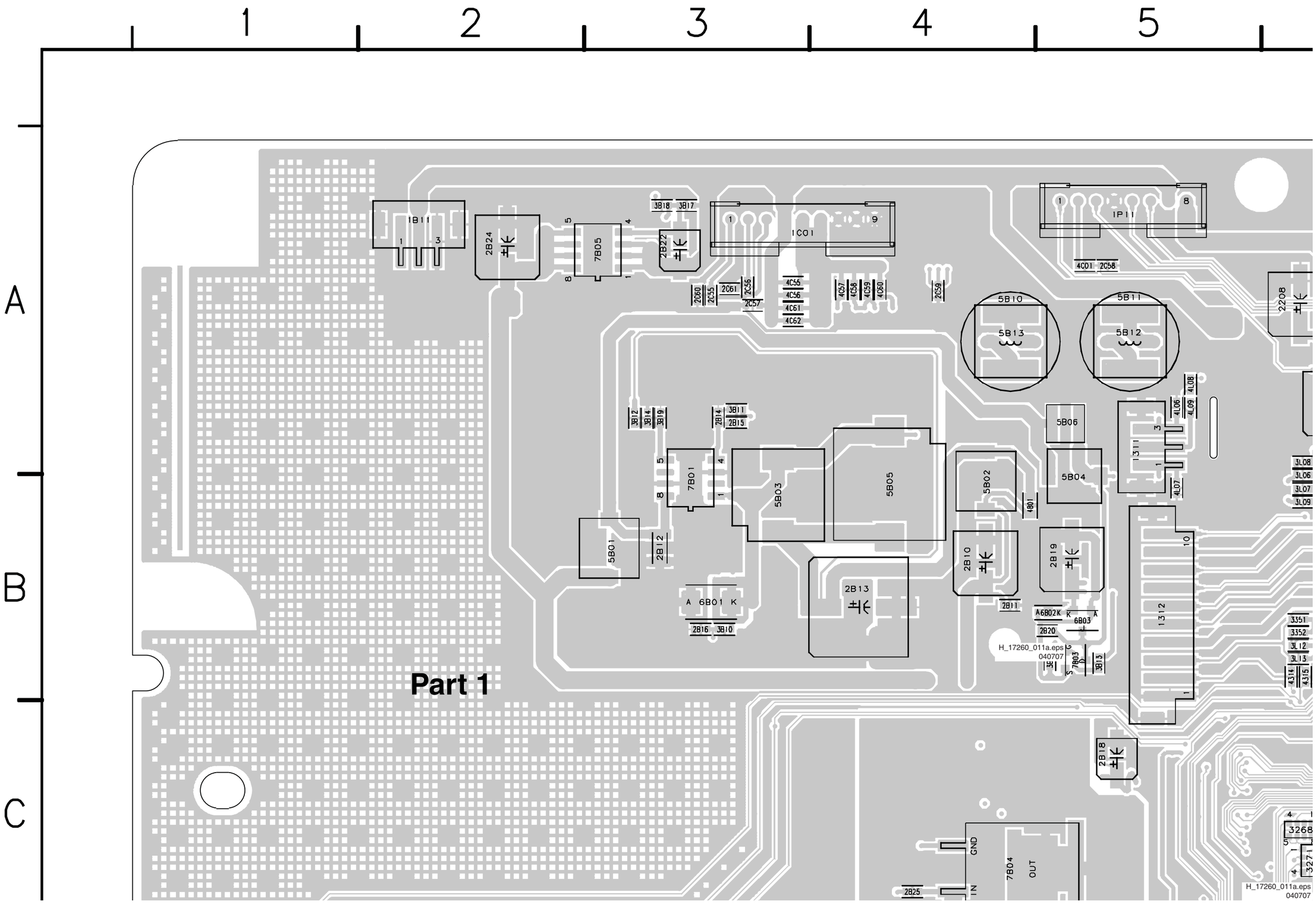
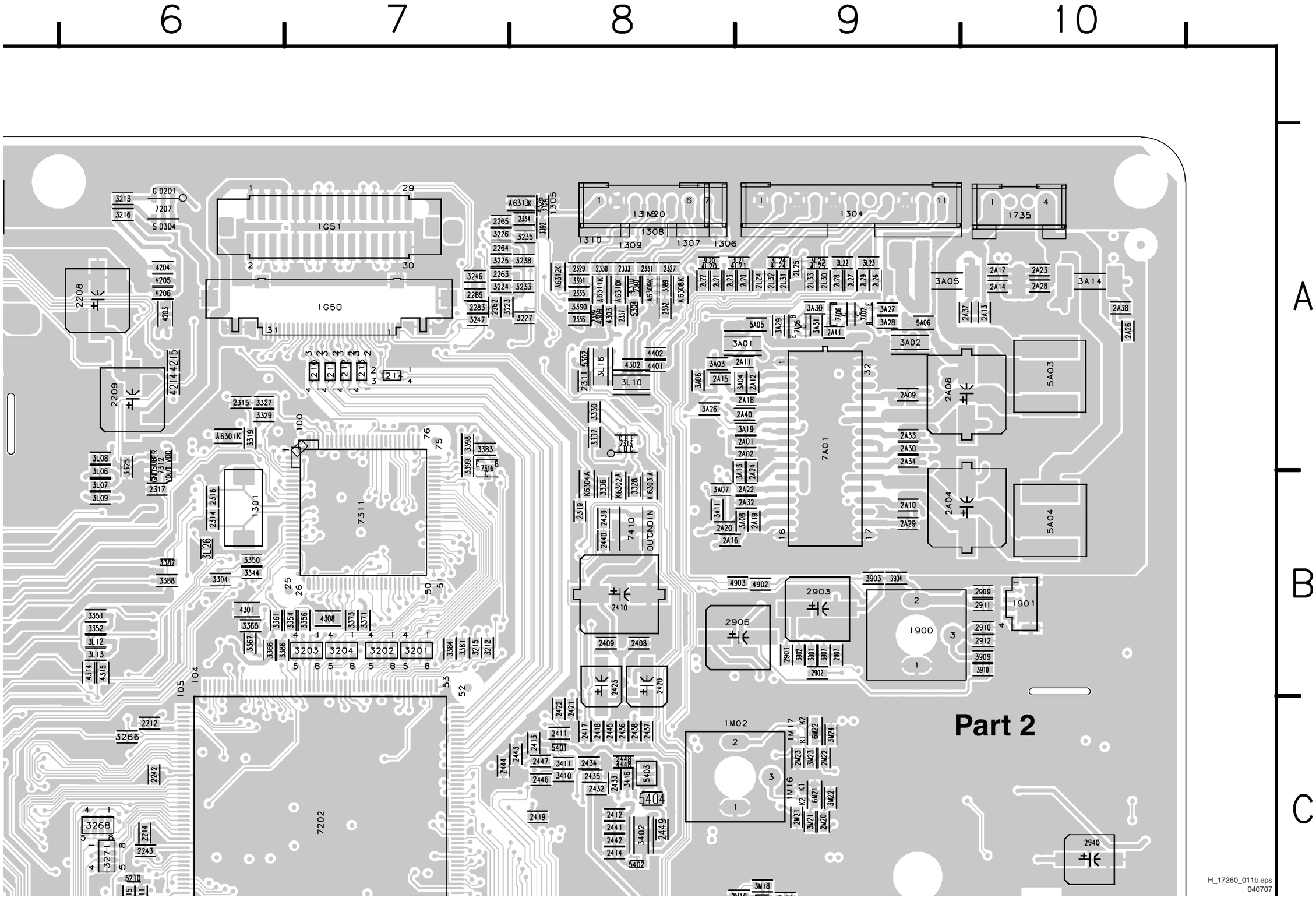
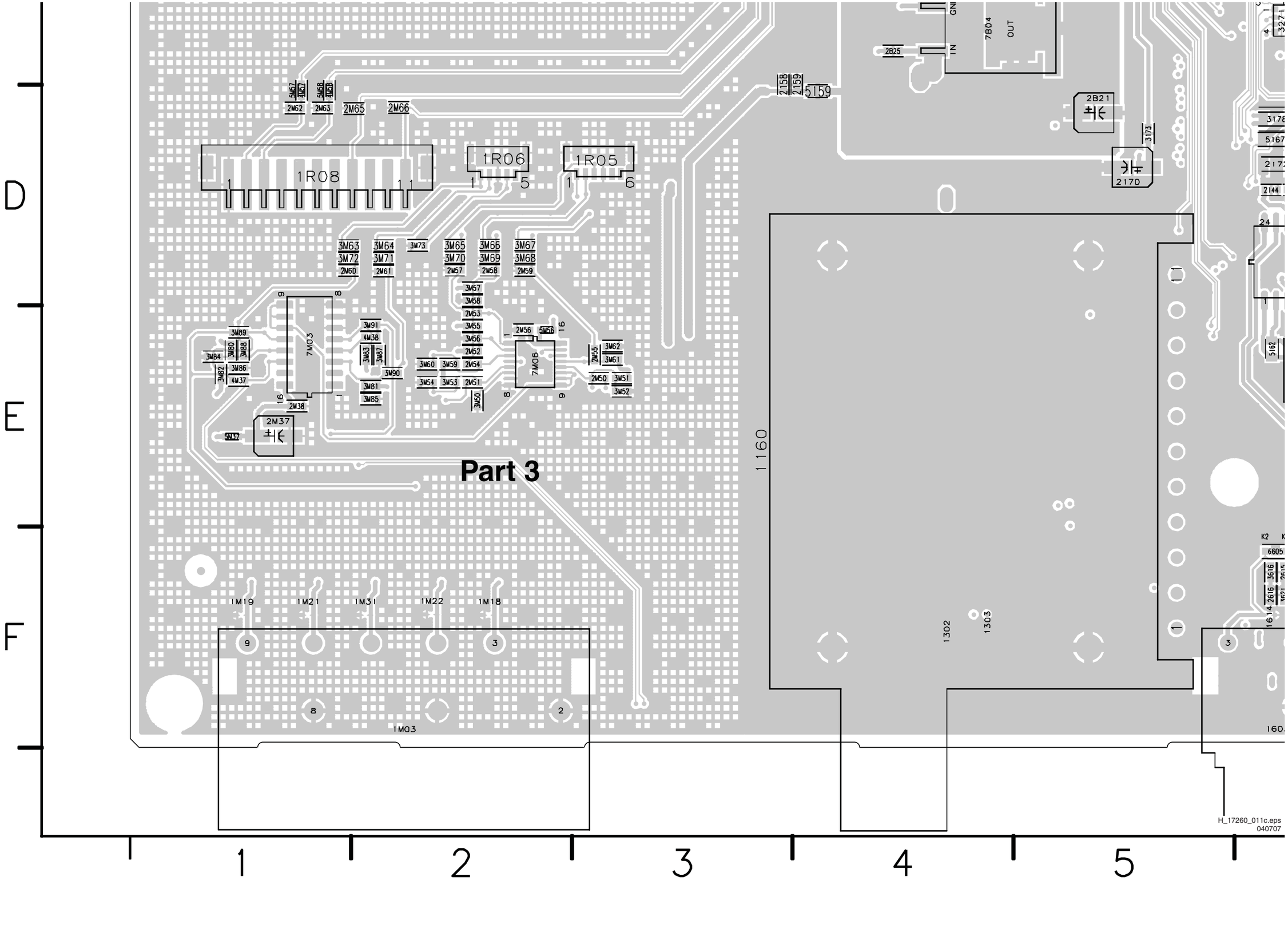
Layout Small Signal Board (Part 1 Top Side)



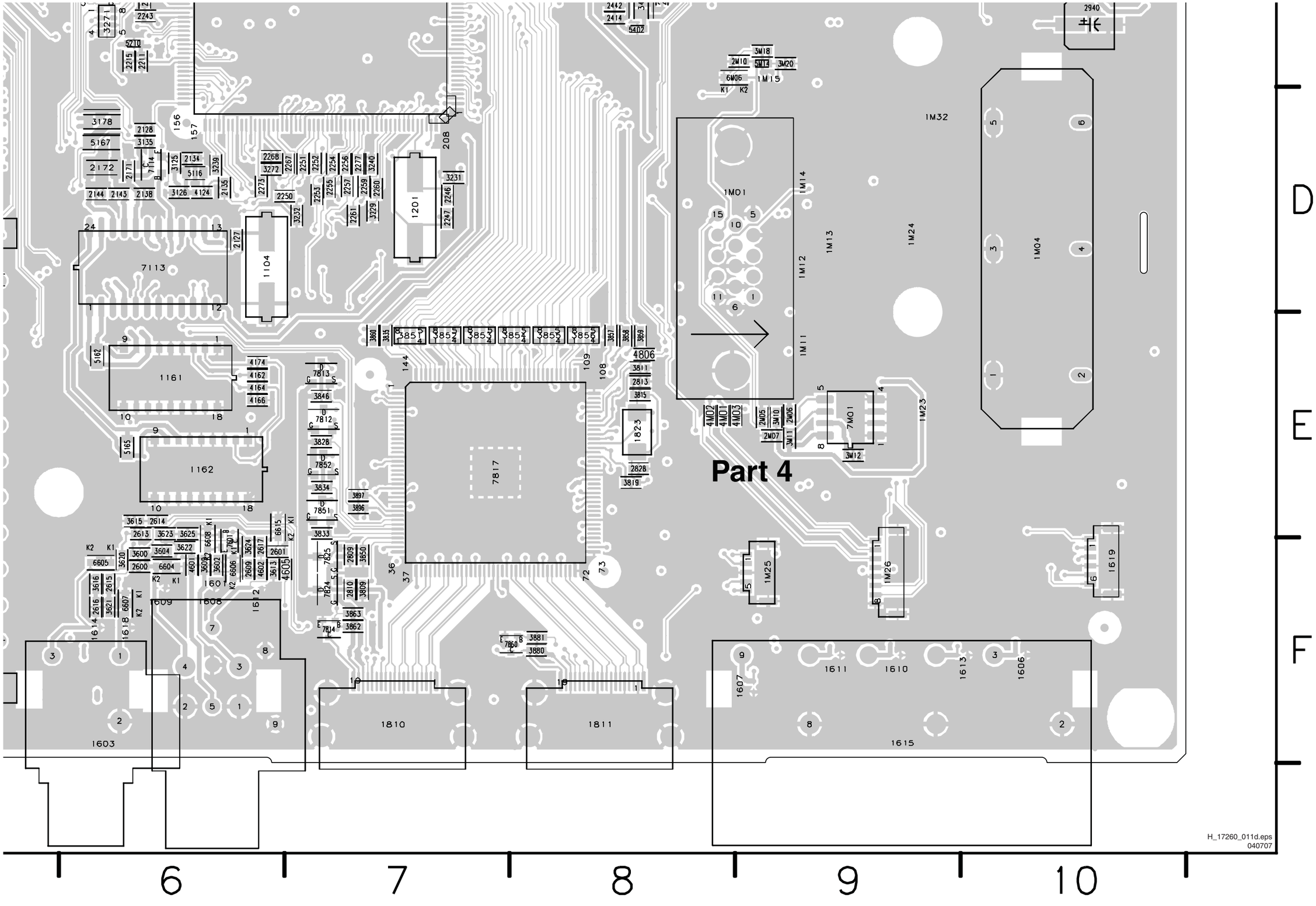
Layout Small Signal Board (Part 2 Top Side)



Layout Small Signal Board (Part 3 Top Side)

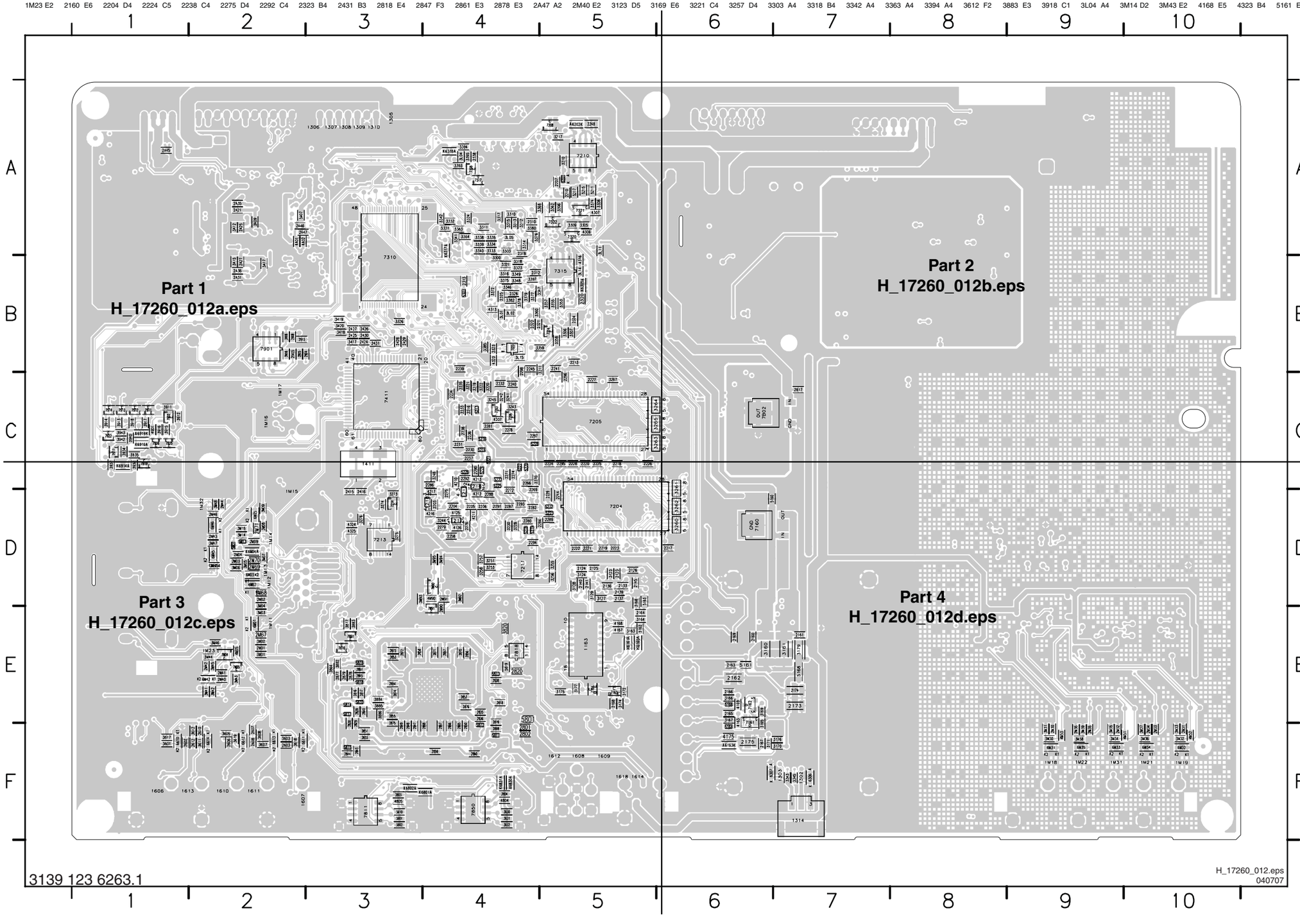


Layout Small Signal Board (Part 4 Top Side)



Layout Small Signal Board (Overview Bottom Side)

1163 E5 1M24 D2 2161 E7 2205 D4 2225 C5 2239 B4 2276 D4 2293 D4 2324 B5 2602 F1 2819 E4 2848 F3 2865 F4 2879 E3 2B17 C7 2M41 E2 3124 D5 3170 F7 3222 C4 3258 D4 3305 A5 3321 B4 3343 F7 3364 A4 3395 A4 3617 F1 3884 E3 3934 C1 3L05 A4 3M15 D2 3M44 E2 4169 E6 4324 D3 5163 D5
1215 D4 1M32 D2 2162 E6 2206 D4 2226 C5 2240 C4 2278 C4 2294 D4 2325 B4 2603 F2 2820 E4 2849 F3 2866 F4 2904 B3 2M01 E2 2M42 E2 3127 D5 3171 F6 3228 D4 3260 D6 3306 B5 3323 B4 3345 F7 3368 A4 3396 A5 3618 F2 3885 E3 3935 C1 3L11 A5 3M30 F9 3M45 E2 4175 F6 4325 D3 5164 F6
1216 C4 2123 D5 2163 E6 2207 A5 2227 C5 2241 B5 2279 D4 2295 C5 2326 B4 2606 F2 2829 F3 2850 F4 2867 F4 2905 B2 2M02 D2 2M43 D2 3128 D5 3172 E5 3230 D4 3261 C6 3307 B5 3324 A4 3346 B4 3372 B4 3397 B4 3619 F2 3886 E3 3937 C1 3L14 B5 3M31 F9 3M46 E2 4207 C4 4804 F4 5166 E6
1217 D4 2124 D5 2164 E5 2210 A5 2228 C5 2244 D5 2280 D4 2296 C5 2338 A4 2607 F2 2830 F3 2851 F3 2868 F4 2908 B2 2M03 D2 2M44 D2 3129 D5 3174 E5 3241 C4 3262 D6 3308 A5 3326 B3 3347 B4 3374 A5 3417 B3 3801 F3 3905 B2 3938 C1 3L15 B4 3M32 F10 3M47 D2 4210 C4 4805 F3 5168 E7
1218 D4 2125 D5 2165 E6 2213 B5 2229 D5 2245 B4 2281 C4 2297 C4 2415 D3 2608 F2 2833 F3 2852 E4 2869 F4 2913 B2 2M04 D2 2M45 D2 3160 E6 3175 E5 3242 C4 3263 C5 3309 A5 3331 A4 3348 B4 3375 B4 3418 B3 3802 F3 3906 B2 3940 C1 3M01 E2 3M33 F10 3M48 D2 4211 D4 4901 C1 5211 A5
1302 F7 2126 D5 2166 E6 2216 C4 2230 C4 2248 A5 2282 D4 2298 B4 2416 D3 2610 F2 2835 E4 2853 E3 2870 E4 2A21 A2 2M09 D2 2M46 D2 3161 E7 3176 F7 3243 C4 3264 C5 3310 A4 3332 A4 3349 B4 3376 A4 3419 B3 3810 F3 3908 B2 3942 C1 3M02 E2 3M34 F9 3M92 D4 4212 D4 4A01 A2 5212 D5
1303 F7 2133 D5 2167 F6 2217 D6 2231 C4 2258 D4 2284 D5 2310 A4 2424 B3 2612 F2 2836 E4 2854 E3 2871 E4 2A25 A2 2M30 F9 2M67 E2 3162 E5 3177 E5 3244 D4 3265 C5 3311 A4 3333 A4 3353 B5 3377 B4 3420 B3 3820 E4 3911 C1 3M03 E2 3M35 F9 3M93 D3 4213 C4 4A02 A2 5213 C4
1314 F7 2136 D5 2168 E5 2218 C5 2232 C4 2266 C4 2286 C4 2312 B4 2425 B3 2801 F4 2838 E4 2855 E3 2872 E3 2A27 B2 2M31 F10 2M68 D2 3163 E5 3179 E7 3245 C4 3267 C5 3312 A4 3334 A4 3355 B5 3378 B4 3601 F1 3830 F4 3912 C1 3A09 A2 3M04 D2 3M36 F10 3M94 D4 4216 D4 4M05 E2 5214 C4
1411 C3 2137 D5 2169 E6 2219 D5 2233 C4 2269 D4 2287 D4 2313 B4 2426 B3 2802 F4 2839 E3 2856 E4 2873 E3 2A31 B2 2M32 F9 2M69 D2 3164 E5 3210 A5 3248 C4 3273 D3 3313 A4 3335 A4 3357 B5 3379 B4 3603 F2 3831 F4 3913 C1 3A12 A2 3M05 D2 3M37 F10 3M95 D4 4217 D4 4M51 F10 5215 A5
1M11 E2 2139 D5 2173 E7 2220 C5 2234 C4 2270 C4 2288 D4 2318 A4 2427 B3 2803 F3 2840 E3 2857 E4 2874 E3 2A35 A2 2M33 F10 2M70 D2 3165 F6 3211 B5 3251 D4 3274 D3 3314 A4 3338 A4 3358 B5 3380 A4 3605 F2 3832 F4 3914 C1 3A15 B2 3M06 D2 3M38 F9 4125 D4 4306 A5 4M52 F10 5216 C4
1M12 D2 2140 D5 2174 E7 2221 D5 2235 C4 2271 C4 2289 D5 2320 B5 2428 B3 2804 F4 2843 F3 2858 E3 2875 F3 2A36 B2 2M34 F10 2M71 D2 3166 E6 3217 A5 3253 D4 3275 D3 3315 A4 3339 A4 3359 B5 3382 B4 3607 F2 3864 E3 3915 C1 3A17 B2 3M07 D2 3M39 F9 4126 D4 4307 A5 4M53 F9 5217 A5
1M13 D2 2141 D5 2175 F6 2222 D5 2236 C4 2272 D4 2290 C4 2321 B4 2429 B3 2816 E3 2844 F3 2859 F4 2876 E4 2A45 A1 2M35 F9 2M90 E4 3167 E6 3219 C4 3255 D5 3276 D3 3316 B4 3340 A4 3360 B4 3385 B4 3608 F2 3877 E3 3916 C1 3L01 B4 3M08 D2 3M41 E2 4163 E6 4313 B4 4M90 D4 5218 D4
1M14 D2 2145 D5 2203 D4 2223 D5 2237 C4 2274 C4 2291 D4 2322 B4 2430 B3 2817 E3 2845 E3 2860 F4 2877 E3 2A46 A2 2M36 F9 2M91 D4 3168 D5 3220 C4 3256 D5 3300 B4 3317 A4 3341 A4 3362 A5 3393 A4 3611 F2 3882 E3 3917 C1 3L02 B4 3M09 D2 3M42 E2 4167 E5 4316 B5 5160 D6 5219 D4
1M23 E2 2160 E6 2204 D4 2224 C5 2238 C4 2275 D4 2292 C4 2323 B4 2431 B3 2818 E4 2847 F3 2861 E3 2878 E3 2A47 A2 2M40 E2 3123 D5 3169 E6 3221 C4 3257 D4 3303 A4 3318 B4 3342 A4 3363 A4 3394 A4 3612 F2 3883 E3 3918 C1 3L04 A4 3M14 D2 3M43 E2 4168 E5 4323 B4 5161 E6 5220 C4



5221 C4 5222 C4 5223 D5 5224 C4 5225 C4 5226 C4 5227 C4 5228 C4 5301 B4 5801 E4 5810 E3 5811 F4 5812 F4 5813 E4 5814 E3 5815 F3 5816 E3 5817 E3 5818 E3 5819 E4 5A07 A2 5M01 D2 5M13 D2 6160 E5 6161 E5 6163 F6 6201 A5 6202 A5 6305 B5 6306 F7 6307 F6 6317 A4 6318 A4 6610 F1 6611 F2 6612 F2 6613 F2 6614 F2 6801 F4 6802 F3 6830 F4 6831 F4 6914 C1 6916 C1 6919 C1 6M01 E2 6M02 D2 6M03 D2 6M04 D2 6M05 D2 6M31 F9 6M32 F10 6M33 F9 6M34 F10 6M35 F9 6M42 E2 6M45 D2 6M46 D2 7160 D6 7161 E6 7162 E6 7163 E5 7164 E5 7203 C4 7204 D5 7205 C5 7206 C4 7208 A5 7210 A5 7211 D4 7213 D3 7214 D3 7308 A4 7310 B3 7314 B5 7315 B5 7317 A4 7320 A5 7321 A5 7322 A5 7323 B4 7411 C3 7811 F3 7816 E3 7818 E4 7850 F4 7861 E3 7901 B2 7902 C1 7911 C1 7912 C1 7913 C1 7914 C1 7915 C1 7916 C1 7917 C1 7919 C1 7922 C1 7B02 C6 7M04 E2 7M05 E2 7M90 D4 7M91 E4

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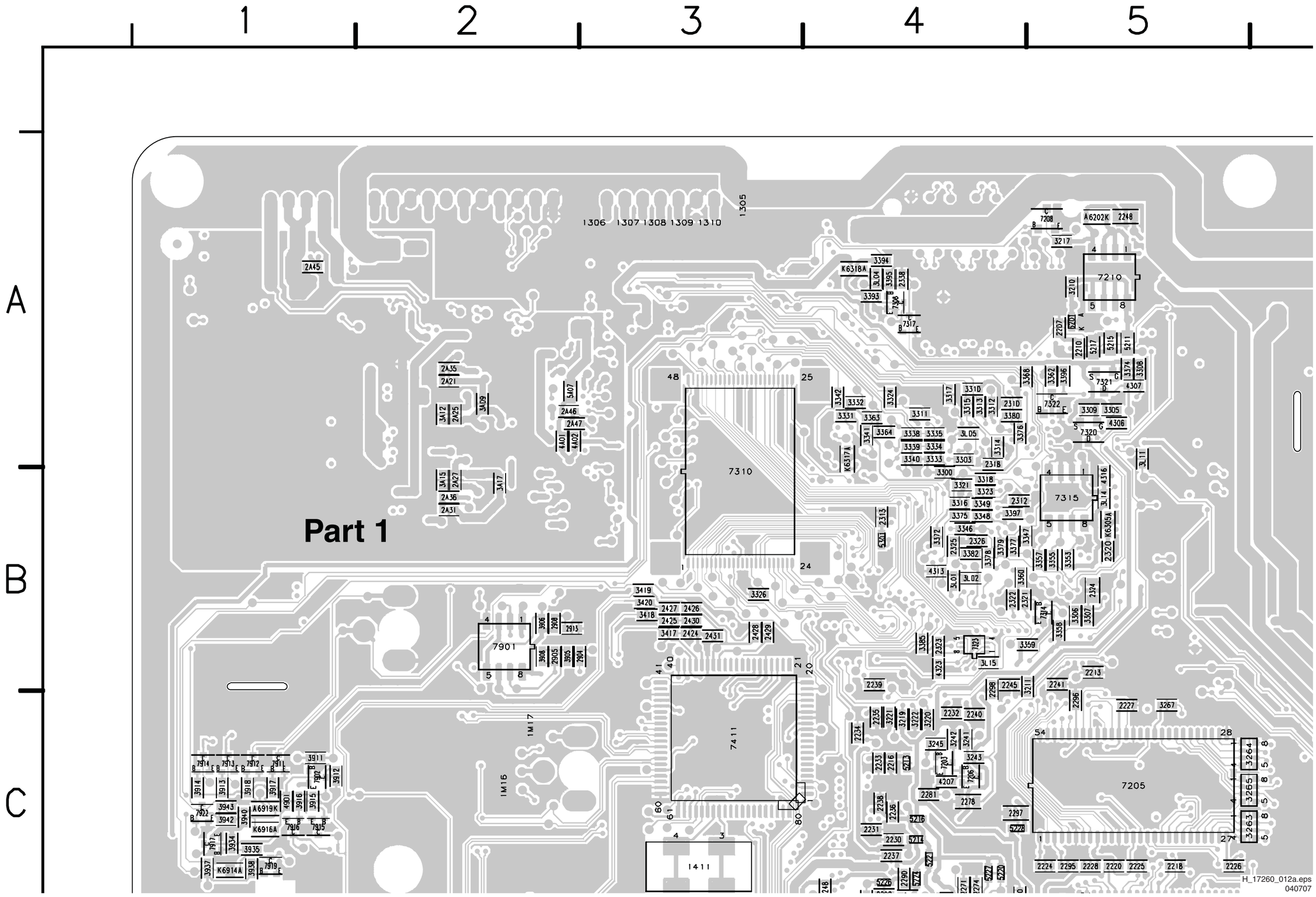
Layout Small Signal Board (Part 1 Bottom Side)



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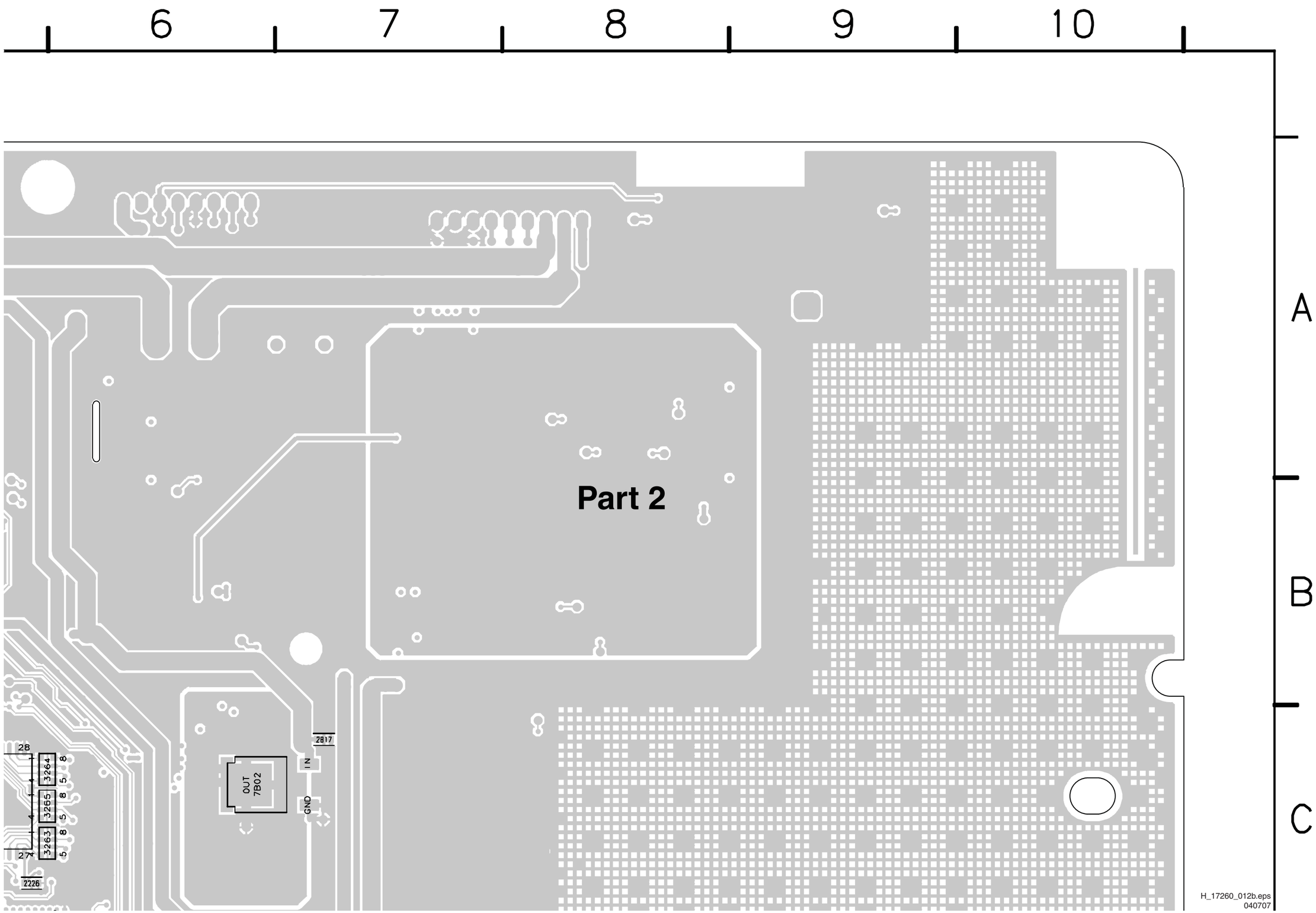
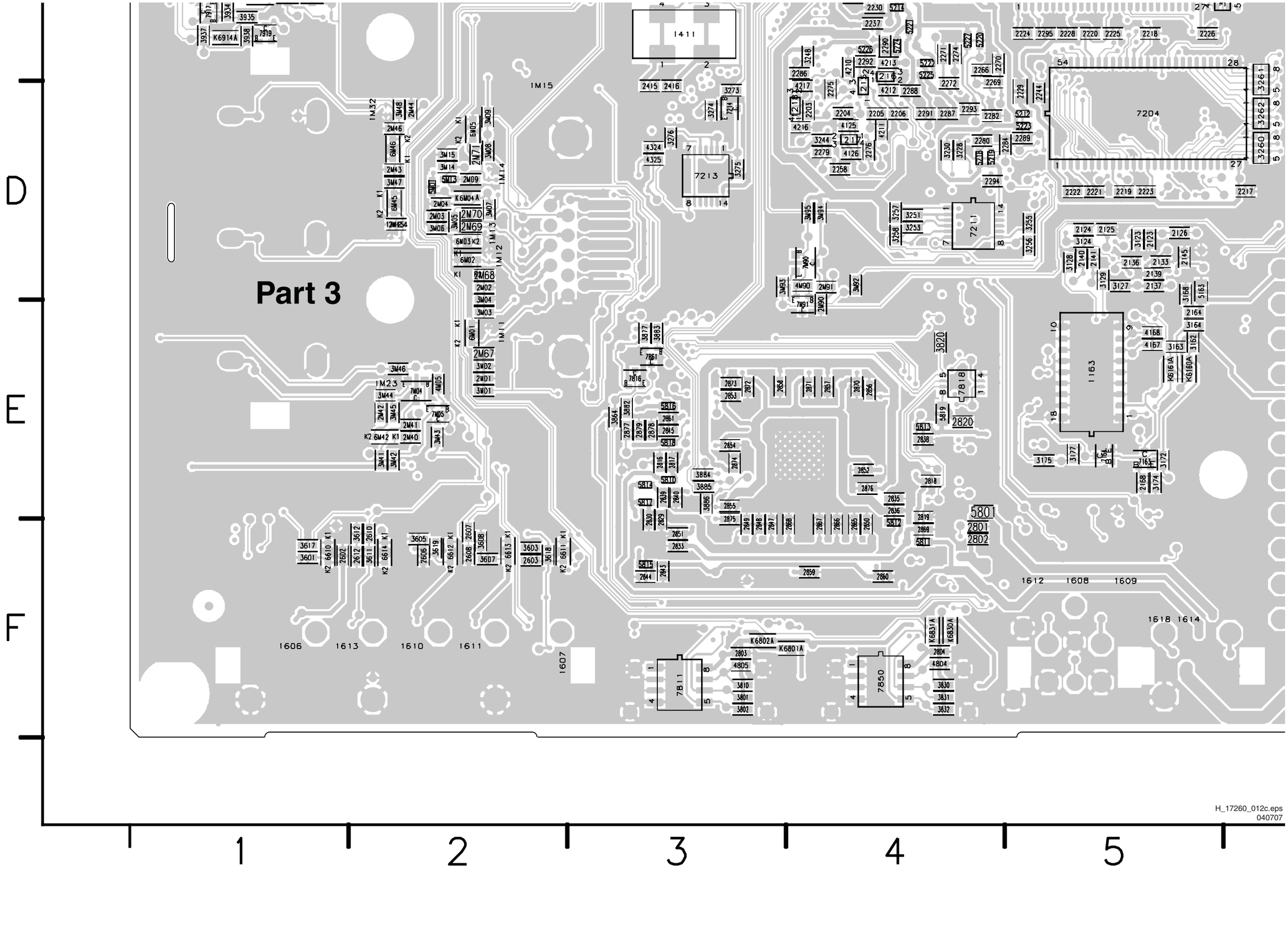
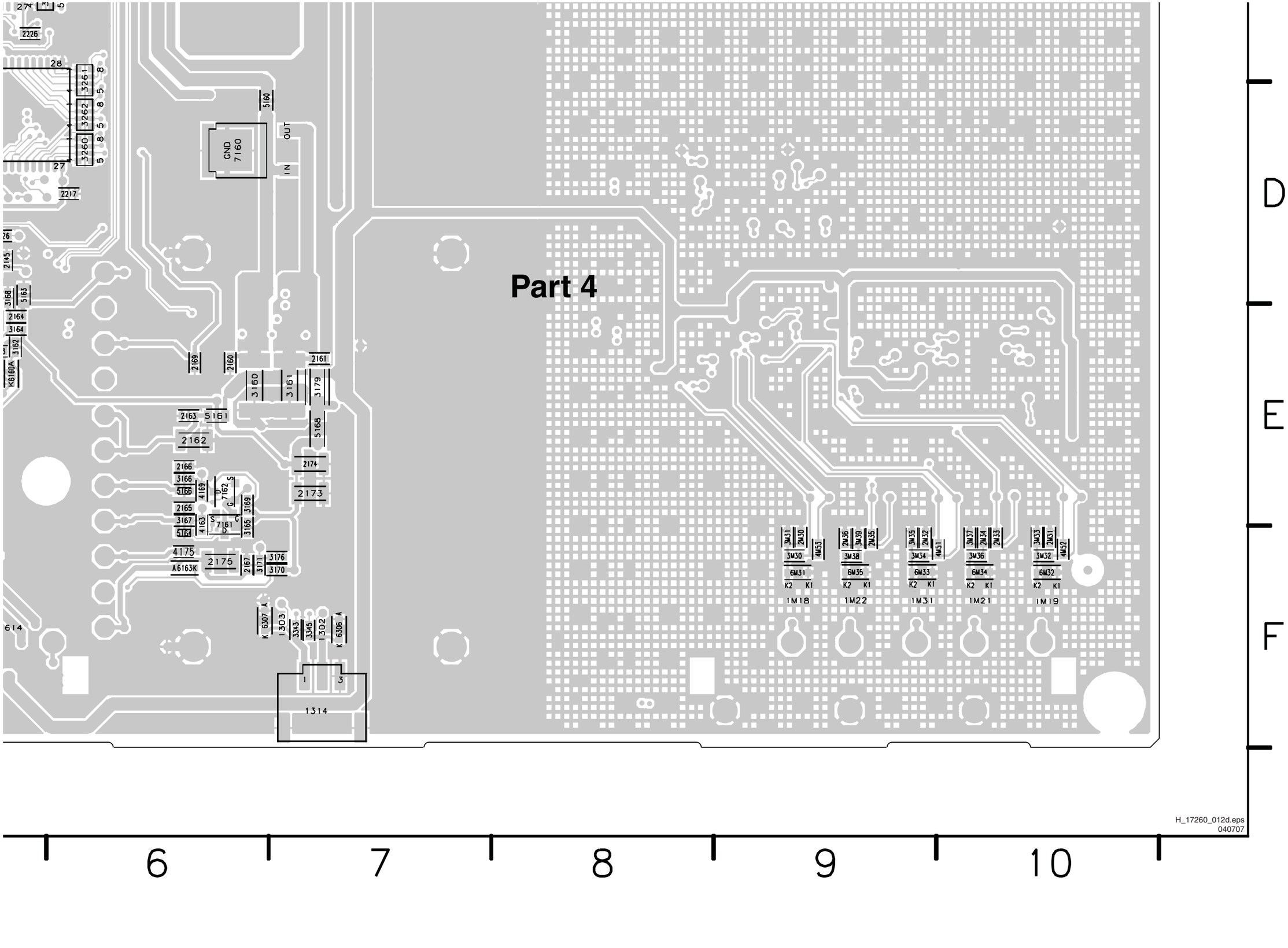
Layout Small Signal Board (Part 2 Bottom Side)



Layout Small Signal Board (Part 3 Bottom Side)



Layout Small Signal Board (Part 4 Bottom Side)



Side A/V Panel

SIDE FACING SIDE AV

1301 YKF51-5564
SVHS
Y_CVBS
C
S302 S301
2303 22p
I303
3303 10R
3304 100R 4304
3302 75R
2301 47p
2302 47p
6301 DF3A6.8
6302 DF3A6.8
3301 75R
3305 10R
3306 100R 4306
2304 47p
3307 100R 4307
YELLOW
CVBS
1302-1 1
I306
S303
2311 22p
6303 DF3A6.8
WHITE
L
1302-2 4
4301 4302
I308
S304
3308 **
2313 **
3314 **
3309 **
2305 **
6304 DF3A6.8
RED
R
1302-3 7
I309
S305
3310 **
2314 **
3315 **
3311 **
2306 **
6305 DF3A6.8
1303
HEADPHONE
YKB21-5101A
I311
I312
4308
4309
S306 S307 S308
2307 22n
2308 22n
2309 10n
2310 10n
3312 10K
3313 10K
6306 DF3A6.8
6307 DF3A6.8

TO 1M36 OF BJ/EBJ SSB **B**

1304
I321
I314 FRONT_Y_CVBS_IN
I315 FRONT_C_IN
I316 L_FRONT_IN
I317 FRONT_DETECT
I318 R_FRONT_IN
I319 HEAD_PH_L
I320 HEAD_PH_R

1310
B3B-PH-K

TO 1H01 OF BJ SSB / TO 1M60 OF EBJ SSB **B**

1309
B5B-PH-K
I330
I331
I332
5300 220R
4310
4311
2312 100u 16V
I325
I326
I327
I328
1308
292303-4
USB
S310 S311 S312 4303

** **DIVERSITY TABLE**

	EBJ 2K7	BJ 2K7	LC07
2305	100p	100p	1n
2306	100p	100p	1n
2313	NA	680p	1n
2314	NA	680p	1n
3314	NA	33K	NA
3315	NA	33K	NA
3308	100R	1K	150R
3310	100R	1K	150R
3309	100K	NA	33K
3311	100K	NA	33K

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110107

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1301 A1 S307 F2
1302-1 C1 S308 F2
1302-2 D1 S310 E8
1302-3 E1 S311 E8
1303 E1 S312 E8
1304 B9
1308 D9
1309 D7
1310 D9
2301 A4
2302 A4
2303 A2
2304 B4
2305 D4
2306 E4
2307 F4
2308 F4
2309 F4
2310 F4
2311 C2
2312 D8
2313 D3
2314 E3
3301 B2
3302 A4
3303 A4
3304 A5
3305 B4
3306 B5
3307 C5
3308 D4
3309 D4
3310 E4
3311 E4
3312 F5
3313 F5
3314 D4
3315 E4
4301 D2
4302 D2
4303 E8
4304 A5
4306 B5
4307 C5
4308 F4
4309 F4
4310 E7
4311 E7
5300 D7
6301 B3
6302 B3
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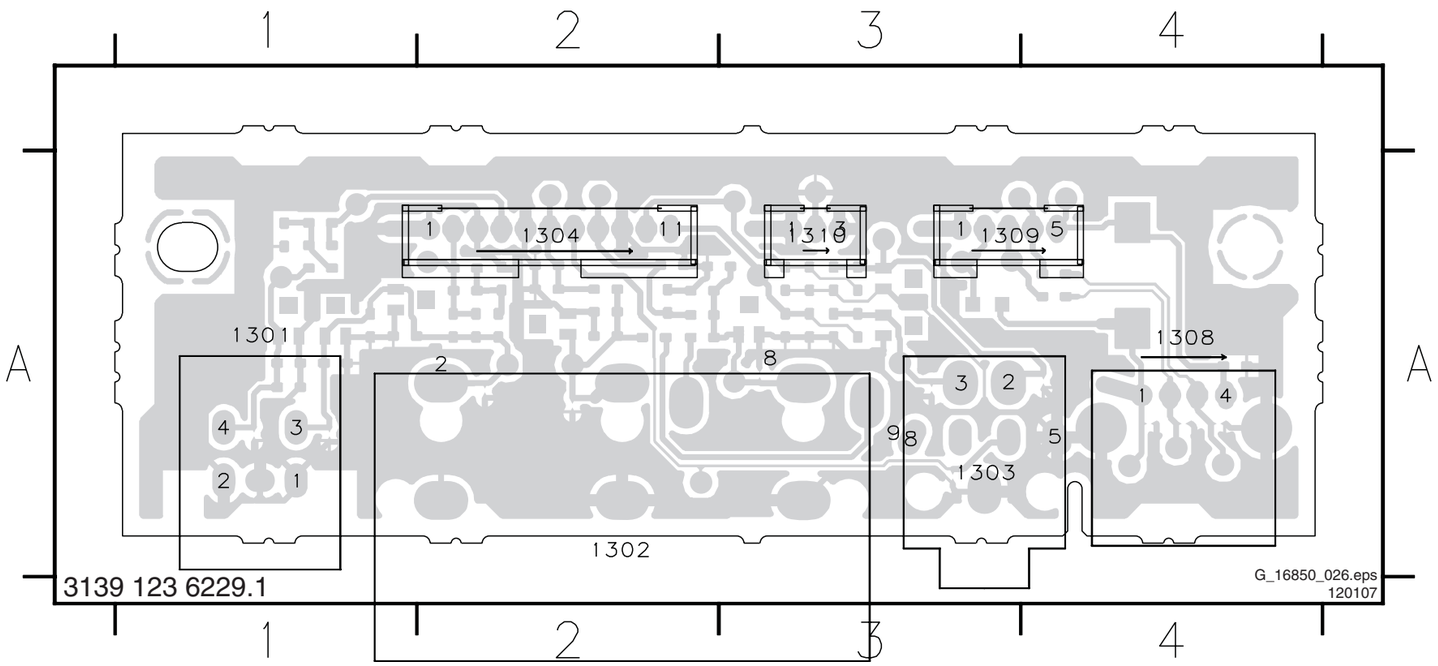
6305 E3
6306 F3
6307 F3
I303 A3
I306 C2
I308 D2
I309 E2
I311 F2
I312 F2
I314 B7
I315 B7
I316 B7
I317 B7
I318 C7
I319 C7
I320 C7
I321 B9
I325 D8
I326 D8
I327 E8
I328 E8
I330 D7
I331 D7
I332 E7
S301 A2
S302 A2
S303 C2
S304 D2
S305 E2
S306 F2

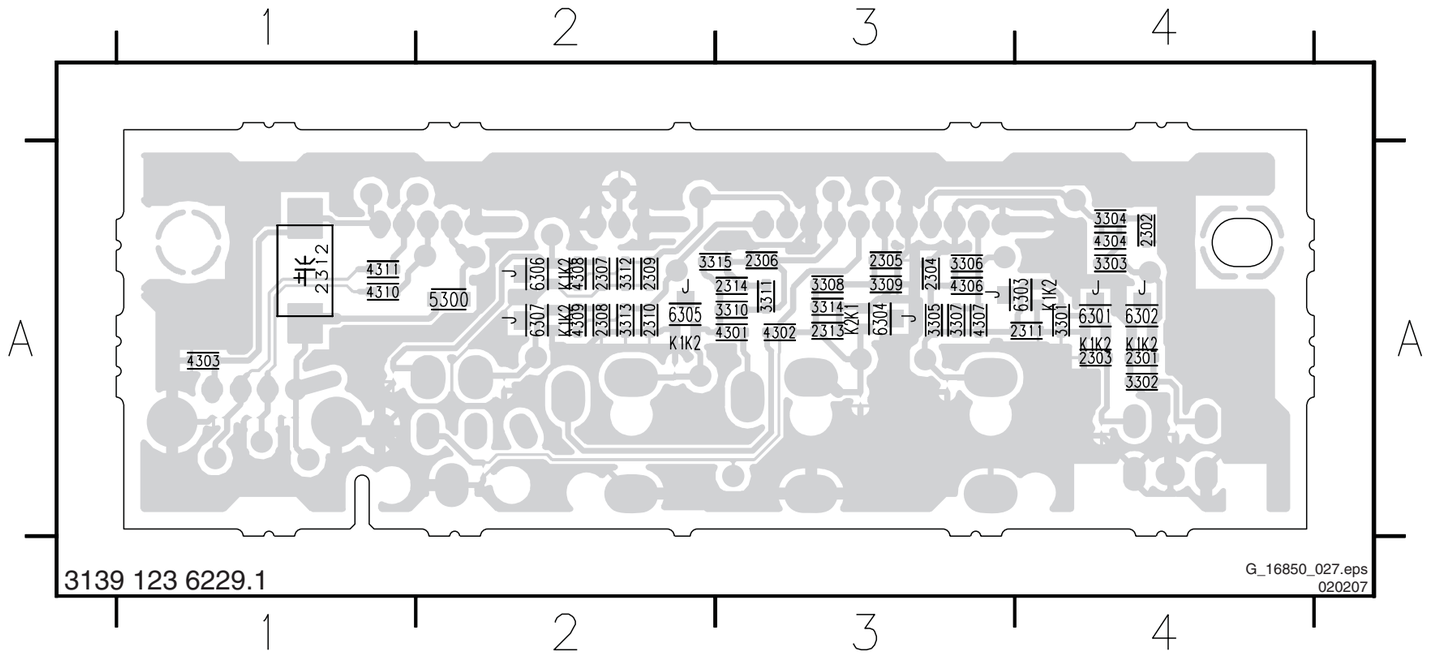
Layout Side A/V Panel (Top Side)

1301 A1 1302 A2 1303 A3 1304 A2 1308 A4 1309 A3 1310 A3

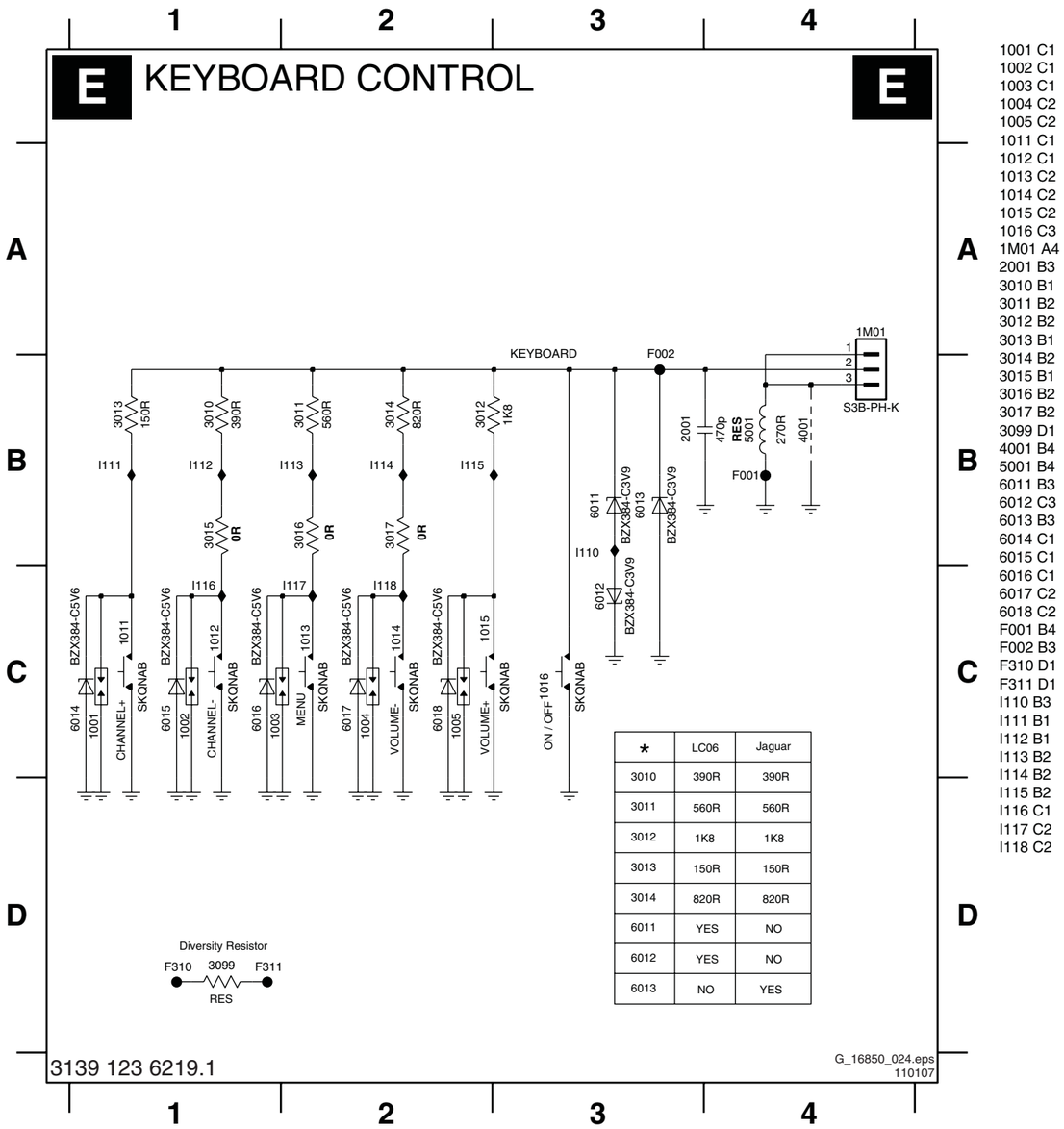


Layout Side A/V Panel (Bottom Side)

2301 A4 2302 A4 2303 A4 2304 A3 2305 A3 2306 A3 2307 A2 2308 A2 2309 A2 2310 A2 2311 A4 2312 A1 2313 A3 2314 A3 3301 A4 3302 A4 3303 A4 3304 A4 3305 A3 3306 A3 3307 A3 3308 A3 3309 A3 3310 A3 3311 A3 3312 A2 3313 A2 3314 A3 3315 A3 4301 A3 4302 A3 4303 A1 4304 A4 4306 A3 4307 A3 4308 A2 4309 A2 4310 A1 4311 A1 5300 A2 6301 A4 6302 A4 6303 A4 6304 A3 6305 A2 6306 A2 6307 A2



Keyboard Control Panel (ME7)



*	LC06	Jaguar
3010	390R	390R
3011	560R	560R
3012	1K8	1K8
3013	150R	150R
3014	820R	820R
6011	YES	NO
6012	YES	NO
6013	NO	YES

1001 C1
1002 C1
1003 C1
1004 C2
1005 C2
1011 C1
1012 C1
1013 C2
1014 C2
1015 C2
1016 C3
1M01 A4
2001 B3
3010 B1
3011 B2
3012 B2
3013 B1
3014 B2
3015 B1
3016 B2
3017 B2
3099 D1
4001 B4
5001 B4
6011 B3
6012 C3
6013 B3
6014 C1
6015 C1
6016 C1
6017 C2
6018 C2
F001 B4
F002 B3
F310 D1
F311 D1
I110 B3
I111 B1
I112 B1
I113 B2
I114 B2
I115 B2
I116 C1
I117 C2
I118 C2

Personal Notes:

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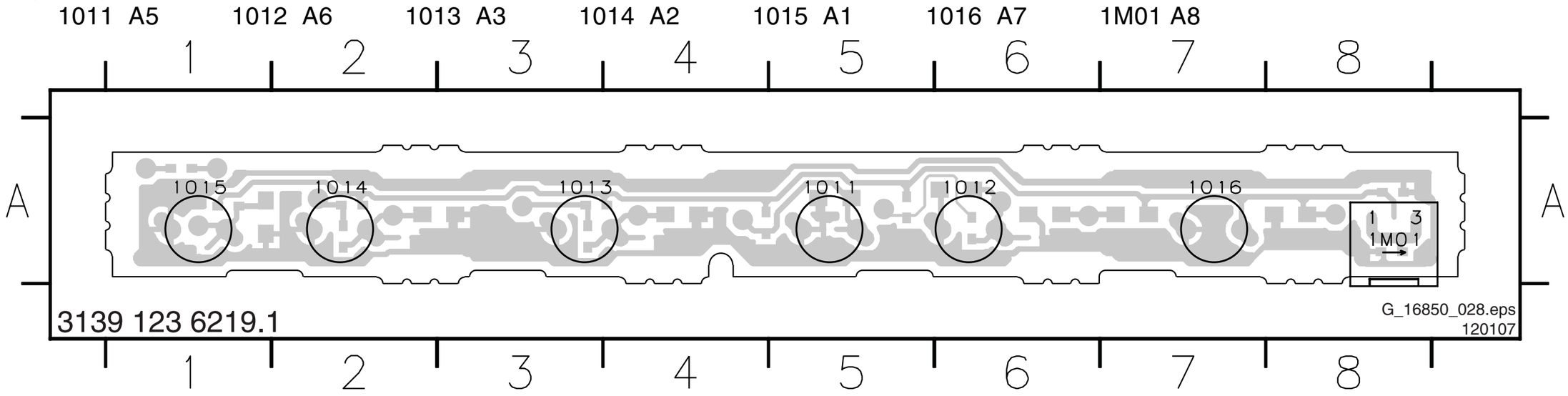
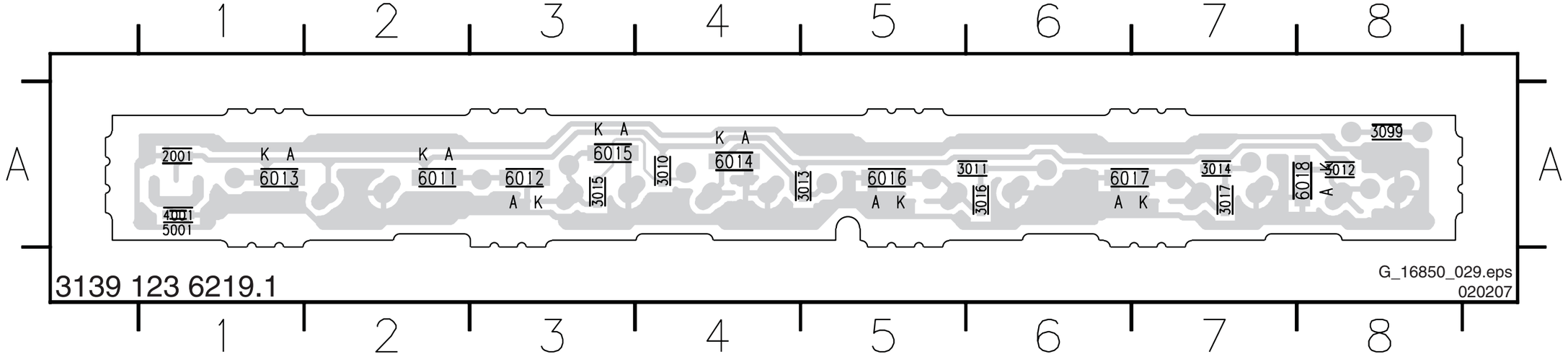
Layout Keyboard Control Panel (ME7)(Top Side)

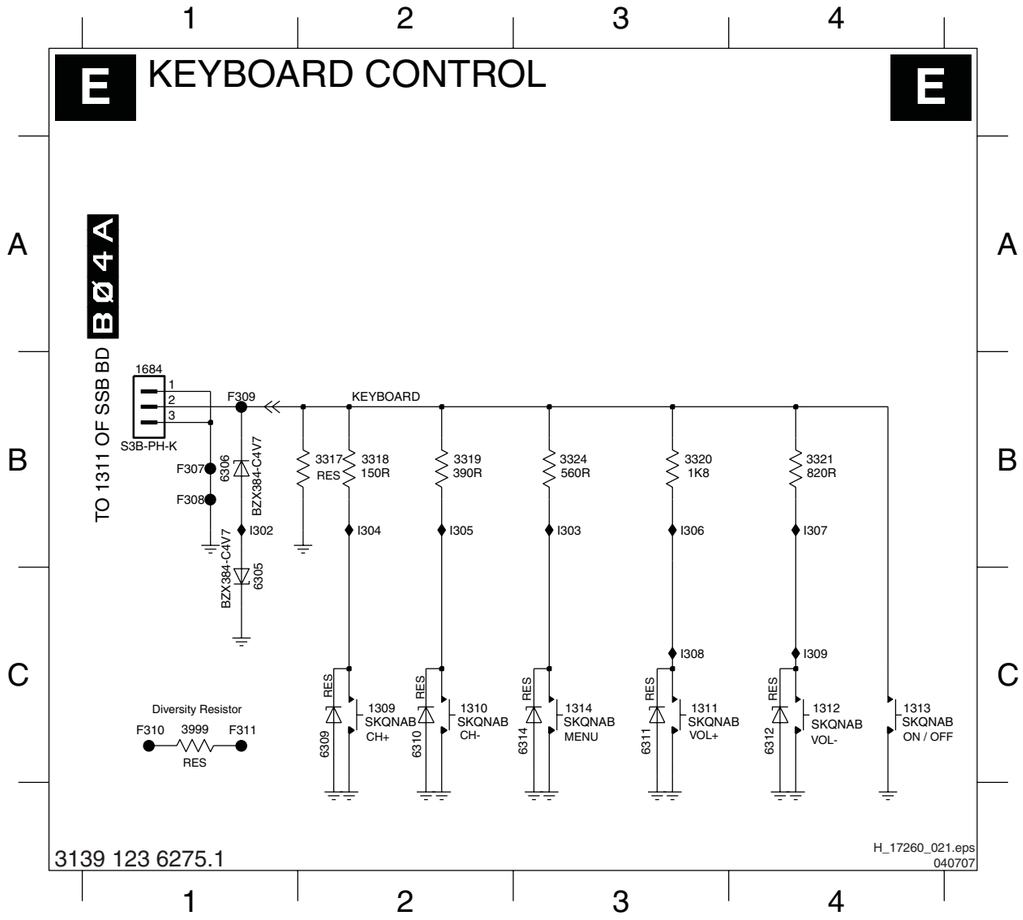


Layout Keyboard Control Panel (ME7)(Bottom Side)

2001 A1 3011 A6 3013 A5 3015 A3 3017 A7 4001 A1 6011 A2 6013 A1 6015 A3 6017 A6
3010 A4 3012 A8 3014 A7 3016 A6 3099 A8 5001 A1 6012 A3 6014 A4 6016 A5 6018 A8



Keyboard Control Panel (ME5P)



Personal Notes:

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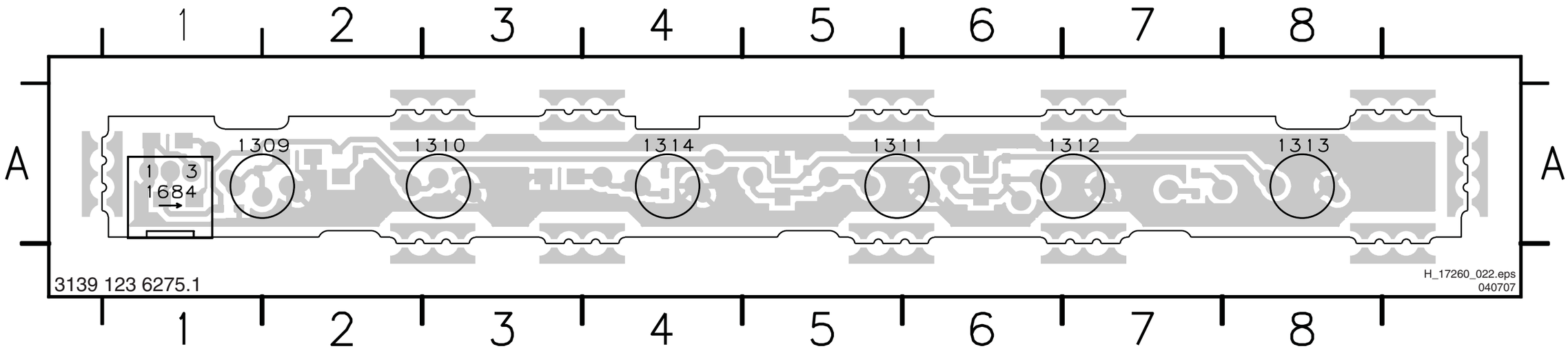
131004

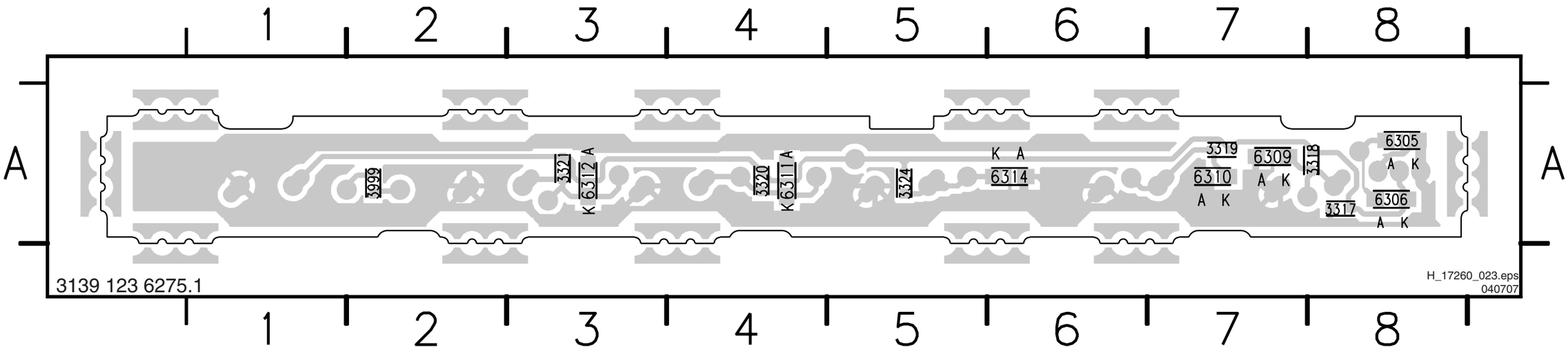
Layout Keyboard Control Panel (ME5P)(Top Side)

1309 A1 1310 A3 1311 A5 1312 A7 1313 A8 1314 A4 1684 A1



Layout Keyboard Control Panel (ME5P)(Bottom Side)

3317 A8 3319 A7 3321 A3 3999 A2 6306 A8 6310 A7 6312 A3
3318 A8 3320 A4 3324 A5 6305 A8 6309 A7 6311 A4 6314 A6



1080p Panel: On Chip uController

F1 OCM ON CHIP MICROCONTROLLER

F1

1101 D8
3110 C7
3111 C7
3112 D6
3113 D6
3114 D5
3115 D5
3116 E5
3117 E5
3118 E5
3119 D5
6101 D7
6102 D7
7101-4 A3
7101-5 C3
F110 D7
F111 D7
F112 D7
I110 D5
I111 D5
I112 D5
I113 D5
I114 E5
I115 E5
I116 E5
I117 D5

F2

7101-4
GM1601
OCM-ADR

OCMADDR(0)	AA1	OCMADDR0	OCMADDR10|GPIO_G11_B2	V2	OCMADDR(10)
OCMADDR(1)	AA2	OCMADDR1	OCMADDR11|GPIO_G11_B3	V3	OCMADDR(11)
OCMADDR(2)	AA3	OCMADDR2	OCMADDR12|GPIO_G11_B4	V4	OCMADDR(12)
OCMADDR(3)	Y1	OCMADDR3	OCMADDR13|GPIO_G11_B5	U1	OCMADDR(13)
OCMADDR(4)	Y2	OCMADDR4	OCMADDR14|GPIO_G11_B6	U2	OCMADDR(14)
OCMADDR(5)	Y3	OCMADDR5	OCMADDR15|GPIO_G11_B7	U3	OCMADDR(15)
OCMADDR(6)	W1	OCMADDR6	OCMADDR16|GPIO_19	U4	OCMADDR(16)
OCMADDR(7)	W2	OCMADDR7|GPIO_18	OCMADDR17|GPIO_20	T1	OCMADDR(17)
OCMADDR(8)	W3	OCMADDR8|GPIO_G11_B0	OCMADDR18|GPIO_21	T2	OCMADDR(18)
OCMADDR(9)	V1	OCMADDR9|GPIO_G11_B1	OCMADDR19|GPIO_22	T3	OCMADDR(19)

F2

7101-5
GM1601
OCM_DATA

OCMDATA(0)	AD4	OCMDATA0	OCM_TIMER1|PWM3|GPIO_13	D25	I117	3119 10K	
OCMDATA(1)	AF3	OCMDATA1	OCM_UDI|GPIO_27	M2	I110	3112 100R	UART_RX
OCMDATA(2)	AE3	OCMDATA2	OCM_UDO|GPIO_26	M1	I111	3113 100R	UART_TX
OCMDATA(3)	AD3	OCMDATA3	OCM_INT1|GPIO_30	L2	I112	3114 10K	
OCMDATA(4)	AF2	OCMDATA4	OCM_INT2|GPI_10	L1	I113	3115 10K	+3V3_SW
OCMDATA(5)	AE2	OCMDATA5	OCM_WE_	R3	#OCM_WE		F2
OCMDATA(6)	AD2	OCMDATA6	OCM_RE_	R2	#OCM_RE		
OCMDATA(7)	AF1	OCMDATA7	OCM_CS0_|GPIO_23	T4	I114	3116 10K	
OCMDATA(8)	AE1	OCMDATA8|GPIO_G10_B0	OCM_CS1_|GPIO_24	P1	I115	3117 10K	+3V3_SW
OCMDATA(9)	AD1	OCMDATA9|GPIO_G10_B1	OCM_CS2_|GPIO_25	P2	I116	3118 10K	
OCMDATA(10)	AC1	OCMDATA10|GPIO_G10_B2	ROM_CS_|GPI_9	R1	#ROM_CS		F2
OCMDATA(11)	AC2	OCMDATA11|GPIO_G10_B3					
OCMDATA(12)	AC3	OCMDATA12|GPIO_G10_B4					
OCMDATA(13)	AB1	OCMDATA13|GPIO_G10_B5					
OCMDATA(14)	AB2	OCMDATA14|GPIO_G10_B6					
OCMDATA(15)	AB3	OCMDATA15|GPIO_G10_B7					

+3V3_SW
3110 10K
3111 10K
6101 BZX384-C6V8
6102 BZX384-C6V8

GPROBE UART
1101
F110
F111
F112
B3B-PH-SM4-TBT(LF)

3139 123 6225.1

G_16860_019.eps
240107

1080p Panel: Flash & NVM

F2 FLASH & NVM

F2

EPROM
512Kx8/256Kx16

7201
M29W400DT-55N6

+3V3_IO
2210
100n
2211
10u 16V

OCMADDR(1)
OCMADDR(2)
OCMADDR(3)
OCMADDR(4)
OCMADDR(5)
OCMADDR(6)
OCMADDR(7)
OCMADDR(8)
OCMADDR(9)
OCMADDR(10)
OCMADDR(11)
OCMADDR(12)
OCMADDR(13)
OCMADDR(14)
OCMADDR(15)
OCMADDR(16)
OCMADDR(17)
OCMADDR(18)

OCMDATA(0)
OCMDATA(1)
OCMDATA(2)
OCMDATA(3)
OCMDATA(4)
OCMDATA(5)
OCMDATA(6)
OCMDATA(7)

3232 1K0
3217 220K
#OCM_WE
#OCM_RE
#ROM_CS

2212 10n
2213 10n

F1

+3V3_IO
10K 3210
10K 3211
10K 3212
10K 3213

3205-1 3205-2 3205-3 3205-4 10K
3204-1 3204-2 3204-3 3204-4 10K
3230 3231 3226 3227 10K
3202-1 3202-3 3202-4 3202-2 10K

3214 10K
3215 10K
3216 10K
RES 3218
RES 3219
RES 3228

F230
F233
F241

+3V3_SW
RES 3229 10K

7202
RES
M24C32-WMN6
(4Kx8)
EEPROM

100n
RES
2214

NVM_WP_SCALER
SCL_IO
SDA_IO

F5
F6
F6

3V2
2215 100n
1u0 2216
3222 1K0
3223 10K RES

1201
SKQR
For Software Development only - (RES)

7203
PST596J
MR SUB VCC GND VOUT
0V
3V2

BZX384-C6V8
6211

1SS356
6210
I215
3224 330R
MAIN_RESET
3225 10K RES

#RESET
F6
F3

PCB MB 1080 BOLT-ON 12NC : 3139_123_62241_02
PCB SB 1080 BOLT-ON 12NC : 3139_123_62251_02

1201 F8
2210 B6
2211 B6
2212 D4
2213 D5
2214 F7
2215 F8
2216 F10
3202-1 D9
3202-2 D9
3202-3 D9
3202-4 D9
3204-1 C9
3204-2 C9
3204-3 C9
3204-4 D9
3205-1 C9
3205-2 C9
3205-3 C9
3205-4 C9
3210 B9
3211 B9
3212 B9
3213 B10
3214 C10
3215 C10
3216 C10
3217 D4
3218 D10
3219 D10
3222 F9
3223 F9
3224 F10
3225 G10
3226 D9
3227 D9
3228 D10
3229 F5
3230 D9
3231 D9
3232 D4
6210 F10
6211 F8
7201 B6
7202 E6
7203 F9
F211 C8
F212 C7
F213 C8
F214 C7
F215 C8
F216 C7
F217 C8
F218 C7
F219 C7
F220 C7
F221 C8
F222 C7
F223 C8
F224 C7
F225 C8
F226 C8
F227 C8
F229 C8
F230 C10
F231 C8
F232 D8
F233 D10
F234 D8
F235 D8
F236 D8
F237 D8
F238 D5
F239 D5
F240 D8
F241 D10
F242 D5
F243 D8
F245 D5
F246 D8
F247 D5
F248 D8
F250 F5
F251 F5
F252 F9
F253 F8
F254 F5
I215 F10

G_16860_020.eps
240107

3139 123 6225.1

1080p Panel: LVDS In

F3 LVDS IN

F3

7101-6
GM1601
VIDEO

VCLAMP|GPIO_31 B17 — 3357 10K
VDV|VSOG|GPIO07 D20 — F310 — VDV
VODD|HSOUT|GPIO_06 B20 — F311 — 4310 RES — VVS
VVS|GPIO_05 C20 — F312
VHS_CSYNC|GPIO_04 D19 — F313 — 4311 — VHS_CSYNC
VFF — I313

RES: 3310 270R, 3311 270R, 3312 270R

SVCLK|GPI_0 I310 D16 — 3314 10K
SVHSYNC|GPIO_02 I311 C14 — 3315 10K
SVVSYNC|GPIO_01 I312 B14 — 3316 10K
SVODD|GPIO_00 I314 A14 — 3318 10K
SVDV|VCOAST|GPIO_03 I315 A17 — 3319 10K
SVDATA7|GPIO_G00_B7 I316 D14 — 3320 10K
SVDATA6|GPIO_G00_B6 I317 A15 — 3321 10K
SVDATA5|GPIO_G00_B5 I318 B15 — 3323 10K
SVDATA4|GPIO_G00_B4 I319 C15 — 3324 10K
SVDATA3|GPIO_G00_B3 I320 D15 — 3325 10K
SVDATA2|GPIO_G00_B2 I321 A16 — 3326 10K
SVDATA1|GPIO_G00_B1 I322 B16 — 3327 10K
SVDATA0|GPIO_G00_B0 I323 C16 — 3329 10K
VCLK|GPI_01 F333 A20 — VCLK

RES 3331 270R

VGRN0|GPIO_G02_B0 A23 — F316 — VGRN(0)
VGRN1|GPIO_G02_B1 C22 — F318 — VGRN(1)
VGRN2|GPIO_G02_B2 B22 — F319 — VGRN(2)
VGRN3|GPIO_G02_B3 A22 — F321 — VGRN(3)
VGRN4|GPIO_G02_B4 D21 — F322 — VGRN(4)
VGRN5|GPIO_G02_B5 C21 — F324 — VGRN(5)
VGRN6|GPIO_G02_B6 B21 — F325 — VGRN(6)
VGRN7|GPIO_G02_B7 A21 — F327 — VGRN(7)

VRED0|GPIO_G01_B0 C19 — F329 — VRED(0)
VRED1|GPIO_G01_B1 B19 — F330 — VRED(1)
VRED2|GPIO_G01_B2 A19 — F332 — VRED(2)
VRED3|GPIO_G01_B3 D18 — F334 — VRED(3)
VRED4|GPIO_G01_B4 C18 — F335 — VRED(4)
VRED5|GPIO_G01_B5 B18 — F336 — VRED(5)
VRED6|GPIO_G01_B6 A18 — F338 — VRED(6)
VRED7|GPIO_G01_B7 C17 — F339 — VRED(7)

VBLU0|GPIO_G03_B0 B25 — F341 — VBLU(0)
VBLU1|GPIO_G03_B1 A25 — F342 — VBLU(1)
VBLU2|GPIO_G03_B2 D24 — F343 — VBLU(2)
VBLU3|GPIO_G03_B3 C24 — F345 — VBLU(3)
VBLU4|GPIO_G03_B4 B24 — F346 — VBLU(4)
VBLU5|GPIO_G03_B5 A24 — F348 — VBLU(5)
VBLU6|GPIO_G03_B6 C23 — F349 — VBLU(6)
VBLU7|GPIO_G03_B7 B23 — F351 — VBLU(7)

VRED(2) 27, VRED(3) 29, VRED(4) 30, VRED(5) 32, VRED(6) 33, VRED(7) 35, VGRN(2) 37
VGRN(3) 38, VGRN(4) 39, VGRN(5) 43, VGRN(6) 45, VGRN(7) 46, VBLU(2) 47, VBLU(3) 51
VBLU(4) 53, VBLU(5) 54, VBLU(6) 55, VBLU(7) 1, VHS_CSYNC 3, VVS 5, VDV 6
VRED(0) 7, VRED(1) 34, VGRN(0) 41, VGRN(1) 42, VBLU(0) 49, VBLU(1) 50, VFF 2

RES: 270R ×24 (3333–3356)

+3V3_LVDSA: 2316 1u0, 2315 100n
+3V3_LVDSVCC: 2314 100n
+3V3_LVDSD: 2313 100n, 2312 100n, 2311 100n, 2310 100n

PLLVCC 23, LVDSVCC 13, VCC 56/48/40/31

LCD PANEL INTERFACE RECEIVER

RA: 0 RA+, 1 RA-, 2 RB+, 3 RB-, 4 RC+, 5 RC-, 6
RB: 0 RD+, 1 RD-, 2 RCLK+, 3 RCLK-, 4 RA+, 5 RA-, 6
RC: 0 RB+, 1 RB-, 2 RA+, 3 RA-, 4 RD+, 5 RD-, 6
RD: 0 RC+, 1 RC-, 2 RB+, 3 RB-, 4 RCLK+, 5 RCLK-, 6

7301 THC63LVDF84B

RA+ 10, RA- 9, RB+ 12, RB- 11, RC+ 16, RC- 15, RD+ 20, RD- 19, RCLK+ 18, RCLK- 17
PDWN 25 — I324 — 3332 4K7 — +3V3_LVDSD
CLKOUT 26 — VCLK

3313 100R, 3317 100R, 3322 100R, 3328 100R, 3330 100R

PLLGND 24/22, GND 52/44/36/28, LVDSGND 21/14/8/4

+VDISP — F314 — 100n 2317

B4B-PH-SM4-TBT(LF) 1302 — 5 4 3 2 1
4312 4313 4314 RES

CON_STND_MAL_N40_M2 1G51

MAIN_SCL F315 — 4315
MAIN_SDA F317 — 4316
MAIN_RESET F320 — 4317

RD+ F323, RD- F326, RCLK+ F328, RCLK- F331, RC+ F337, RC- F340, RB+ F344, RB- F354, RA+ F350, RA- F352
F353
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42

DF13-40DP-1.25V

PCB MB 1080 BOLT-ON 12NC : 3139_123_62241_02
PCB SB 1080 BOLT-ON 12NC : 3139_123_62251_02

"300" ~ "399"

3139 123 6225.1

G_16860_021.eps
240107

1302 B12 F346 D6
1G51 C12 F348 D6
2310 B10 F349 E6
2311 B10 F350 E11
2312 B9 F351 E6
2313 B9 F352 E11
2314 B8 F353 F11
2315 B8 F354 D11
2316 B7 I310 B2
2317 F10 I311 C2
3310 B6 I312 C2
3311 B6 I313 C6
3312 B6 I314 C2
3313 C10 I315 C2
3314 B2 I316 C2
3315 C2 I317 C2
3316 C2 I318 C2
3317 C9 I319 C2
3318 C2 I320 C2
3319 C2 I321 C2
3320 C2 I322 C2
3321 C2 I323 D2
3322 D9 I324 E9
3323 C2
3324 C2
3325 C2
3326 C2
3327 D2
3328 D9
3329 D2
3330 E9
3331 D2
3332 E10
3333 F4
3334 F5
3335 F5
3336 F5
3337 F5
3338 F5
3339 F5
3340 F5
3341 F5
3342 F5
3343 F5
3344 F5
3345 F5
3346 F5
3347 F6
3348 F6
3349 F6
3350 F6
3351 F6
3352 F6
3353 F6
3354 F6
3355 F6
3356 F6
3357 B5
4310 B5
4311 C5
4312 B11
4313 B11
4314 B11
4315 C12
4316 C12
4317 C12
7101-6 B3
7301 C9
F310 B5
F311 B5
F312 B5
F313 C5
F314 E10
F315 C11
F316 C6
F317 C11
F318 C6
F319 C6
F320 C11
F321 C6
F322 C6
F323 C11
F324 C6
F325 C6
F326 C11
F327 C6
F328 D11
F329 C6
F330 D6
F331 D11
F332 D6
F333 D2
F334 D6
F335 D6
F336 D6
F337 D11
F338 D6
F339 D6
F340 D11
F341 D6
F342 D6
F343 D6
F344 D11
F345 D6

1080p Panel: LVDS Out

F4 LDVS OUT

F4

+VDISP

F3

4401

5410 RES

I411 7411 I410 5411 120R

3410 10K 2410 4u7

Q3 SI2301BDS-T1-E3

I412

3411 15K 3412 100R

I413 I414

7412 PDTC114ET

2414 1u0 16V

F410

7101-7 GM1601 CTRL

I415 3413 3k3

AC16 OEXTR

C26 PWM0|GPIO_10

C25 PWM1|GPIO_11

AF17 DHS|GPIO_14

AD16 DVS|GPIO_15

AD7 DEN|GPIO_16

PPWR|GPIO_08 A26

PBIAS|GPIO_09 B26

DCLK|GPIO_17 AC7

PWM2|GPIO_12 D26

RES

2434 100n

2411 47u 16V

LVDS GM1601 7101-8

AC+|GPIO_G06_B6 AE20

AC-|GPIO_G06_B7 AF20

A3+|GPIO_G06_B4 AE19

A3-|GPIO_G06_B5 AF19

A2+|GPIO_G05_B1 AE21

A2-|GPIO_G05_B2 AF21

A1+|GPIO_G05_B4 AE22

A1-|GPIO_G05_B5 AF22

A0+|GPIO_G05_B6 AE23

A0-|GPIO_G05_B7 AF23

SHIELD5 AD14

SHIELD4 AE13

SHIELD3 AE11

SHIELD2 AD11

SHIELD1 AC11

SHIELD0 AF10

BC+ AE12

BC- AF13

B3+ AF11

B3- AF12

B2+ AF14

B2- AE14

B1+ AF15

B1- AE15

B0+ AF16

B0- AE16

TXA0n TXA0p TXA1n TXA1p TXA2n TXA2p TXACp TXACn TXA3p TXA3n TXB0n TXB0p TXB1n TXB1p TXB2n TXB2p TXBCp TXBCn TXB3p TXB3n

1411 1412 1413 1414 1415 1416 1417 1418 1419 1420 DLW21S

2412 2413 2415 2416 2417 2418 2419 2420 2421 2422 2423 2424 2425 2426 2427 2428 2429 2430 2431 2432 10p

+VPANEL F411

F412 F413 F414 F415 F416 F417 F418 F419 F420 F421 F422 F423 F424 F425 F426 F427 F428 F429 F430 F431 F432

1G52 FI-RE41S-HF

PCB MB 1080 BOLT-ON 12NC : 3139_123_62241_02
PCB SB 1080 BOLT-ON 12NC : 3139_123_62251_02

"400" ~ "499"

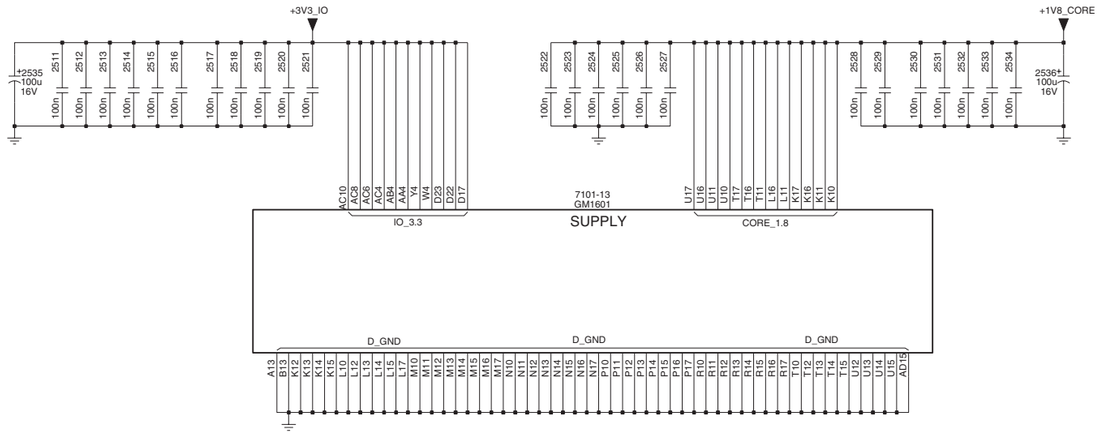
3139 123 6225.1

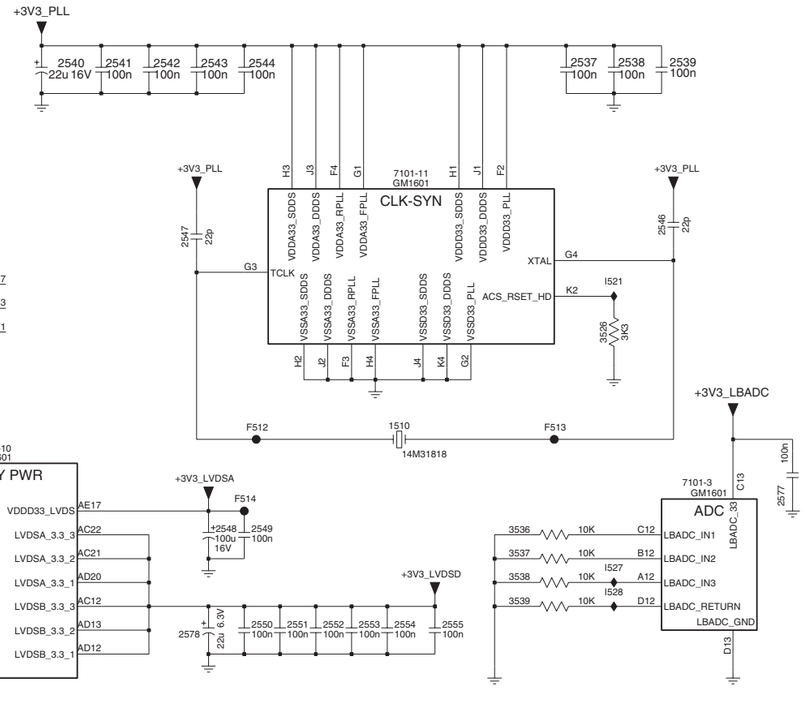
G_16860_022.eps 240107

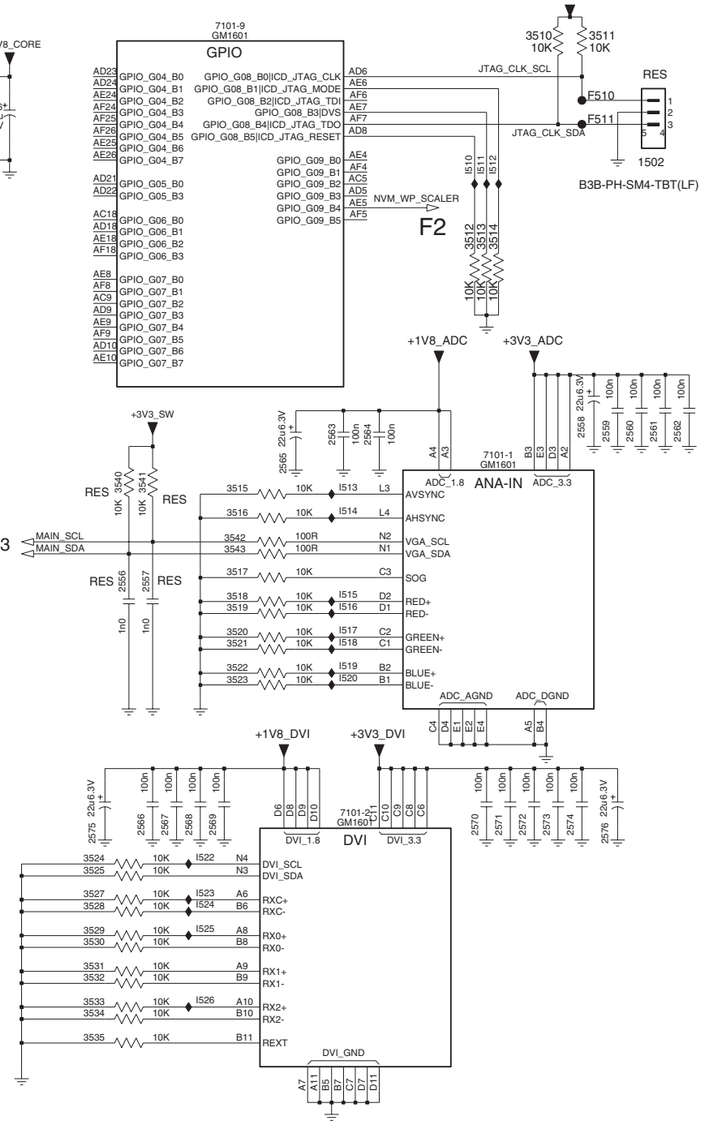
1411 B8
1412 C8
1413 C8
1414 D8
1415 D8
1416 E8
1417 E8
1418 F8
1419 F8
1420 G8
1G52 B11
2410 B4
2411 B10
2412 B9
2413 B9
2414 C4
2415 C9
2416 C9
2417 C9
2418 C9
2419 D9
2420 D9
2421 D9
2422 D9
2423 E9
2424 E9
2425 E9
2426 E9
2427 F9
2428 F9
2429 F9
2430 F9
2431 G9
2432 G9
2434 B10
3410 B4
3411 B4
3412 B4
3413 C1
4401 A6
5410 A4
5411 A5
7101-7 B2
7101-8 F4
7411 B4
7412 C4
F410 C3
F411 C10
F412 C10
F413 C10
F414 C10
F415 C10
F416 C10
F417 C10
F418 D10
F419 D10
F420 D10
F421 D10
F422 D10
F423 D10
F424 D10
F425 D10
F426 D10
F427 E10
F428 E10
F429 E10
F430 E10
F431 E10
F432 E11
I410 B5
I411 B4
I412 B4
I413 B4
I414 B4
I415 B1

1080p Panel: Supply In

F5 SUPPLY IN







"500" ~ "599"

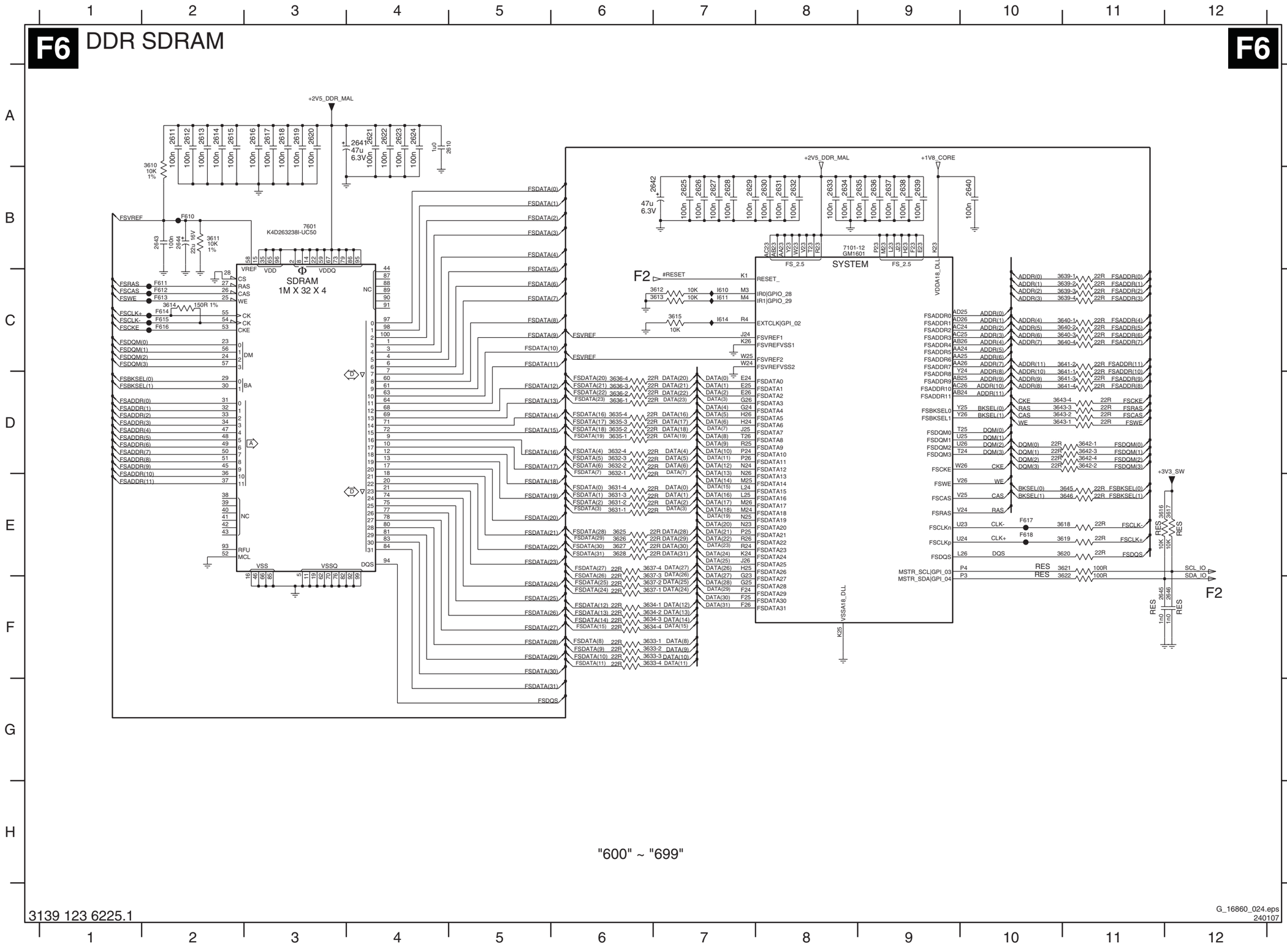
3139 123 6225.1

G_16860_023.eps
240107

1502 B12 7101-10 F2
1510 F5 7101-11 E5
2511 A2 7101-13 B5
2512 A2 7101-14 E2
2513 A2 7101-2 F10
2514 A2 7101-3 G7
2515 A3 7101-9 A9
2516 A3 F510 A12
2517 A3 F511 A12
2518 A3 F512 F4
2519 A3 F513 F6
2520 A3 F514 G4
2521 A3 I510 B11
2522 A5 I511 B11
2523 A5 I512 B11
2524 A5 I513 D10
2525 A5 I514 D10
2526 A5 I515 D10
2527 A6 I516 D10
2528 A7 I517 D10
2529 A7 I518 D10
2530 A7 I519 E10
2531 A7 I520 E10
2532 A7 I521 E6
2533 A8 I522 F9
2534 A8 I523 F9
2535 A2 I524 F9
2536 A8 I525 F9
2537 D6 I526 G9
2538 D6 I527 G6
2539 D6 I528 G6
2540 D3
2541 D3
2542 D3
2543 D4
2544 D4
2546 E6
2547 E3
2548 G4
2549 G4
2550 G4
2551 G4
2552 G4
2553 G5
2554 G5
2555 G5
2556 D9
2557 D9
2558 C11
2559 C12
2560 C12
2561 C12
2562 C12
2563 C10
2564 C10
2565 C10
2566 F9
2567 F9
2568 F9
2569 F9
2570 F11
2571 F11
2572 F11
2573 F11
2574 F11
2575 F9
2576 F12
2577 G7
2578 H3
3510 A11
3511 A11
3512 B11
3513 B11
3514 B11
3515 D9
3516 D9
3517 D9
3518 D9
3519 D9
3520 D9
3521 E9
3522 E9
3523 E9
3524 F9
3525 F9
3526 F6
3527 F9
3528 F9
3529 F9
3530 F9
3531 F9
3532 G9
3533 G9
3534 G9
3535 G9
3536 G5
3537 G5
3538 G5
3539 G5
3540 D9
3541 D9
3542 D9
3543 D9
7101-1 C11

1080p Panel: DDR SDRAM

F6 DDR SDRAM



3139 123 6225.1

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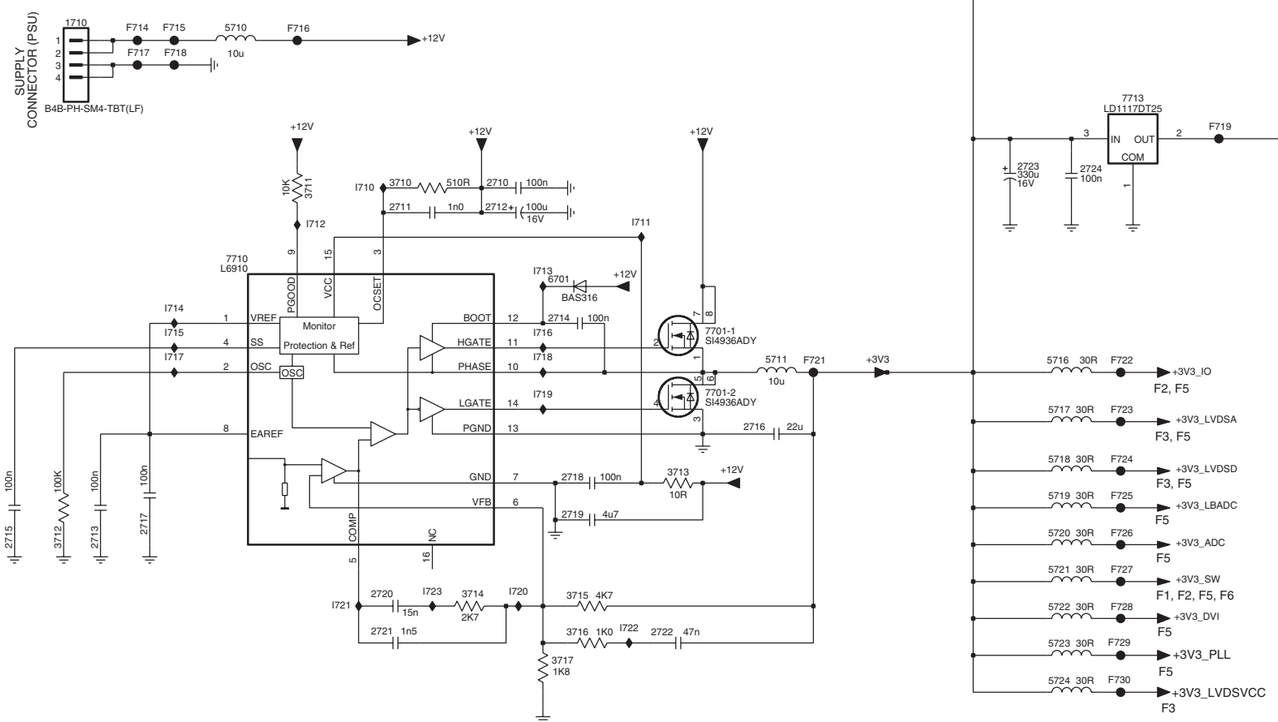
2610 A4 7101-12 B8
2611 A2 7601 B3
2612 A2 F610 B2
2613 A2 F611 C2
2614 A2 F612 C2
2615 A2 F613 C2
2616 A3 F614 C2
2617 A3 F615 C2
2618 A3 F616 C2
2619 A3 F617 E10
2620 A3 F618 E10
2621 A4 I610 C7
2622 A4 I611 C7
2623 A4 I614 C7
2624 A4
2625 B7
2626 B7
2627 B7
2628 B7
2629 B7
2630 B8
2631 B8
2632 B8
2633 B8
2634 B8
2635 B8
2636 B9
2637 B9
2638 B9
2639 B9
2640 B10
2641 A4
2642 B6
2643 B2
2644 B2
2645 F11
2646 F12
3610 A2
3611 B2
3612 C7
3613 C7
3614 C2
3615 C7
3616 E11
3617 E12
3618 E11
3619 E11
3620 E11
3621 E11
3622 F11
3625 E6
3626 E6
3627 E6
3628 E6
3631-1 E6
3631-2 E6
3631-3 E6
3631-4 E6
3632-1 E6
3632-2 D6
3632-3 D6
3632-4 D6
3633-1 F6
3633-2 F6
3633-3 F6
3633-4 F6
3634-1 F6
3634-2 F6
3634-3 F6
3634-4 F6
3635-1 D6
3635-2 D6
3635-3 D6
3635-4 D6
3636-1 D6
3636-2 D6
3636-3 D6
3636-4 D6
3637-1 F6
3637-2 F6
3637-3 F6
3637-4 E6
3639-1 C11
3639-2 C11
3639-3 C11
3639-4 C11
3640-1 C11
3640-2 C11
3640-3 C11
3640-4 C11
3641-1 D11
3641-2 C11
3641-3 D11
3641-4 D11
3642-1 D11
3642-2 D11
3642-3 D11
3642-4 D11
3643-1 D11
3643-2 D11
3643-3 D11
3643-4 D11
3645 E11
3646 E11

1080p Panel: DC Power Supply

F7 DC POWER SUPPLY

F7



"700" ~ "799"

1710 C2
2710 D5
2711 D4
2712 D5
2713 F2
2714 E5
2715 F2
2716 E6
2717 F3
2718 F5
2719 F5
2720 F4
2721 F4
2722 F6
2723 D8
2724 D8
2727 B9
2728 B9
2729 B8
2730 B8
3710 D4
3711 D4
3712 F2
3713 E6
3714 F5
3715 F5
3716 F5
3717 G5
5710 C3
5711 E6
5712 B10
5713 B10
5714 C10
5715 C10
5716 E8
5717 E8
5718 E8
5719 F8
5720 F8
5721 F8
5722 F8
5723 F8
5724 G8
6701 D5
7701-1 E6
7701-2 E6
7710 D3
7713 C8
7714 B8
F710 B9
F711 B10
F712 B10
F713 C10
F714 C3
F715 C3
F716 C4
F717 C3
F718 C3
F719 C9
F720 C10
F721 E7
F722 E8
F723 E8
F724 E8
F725 F8
F726 F8
F727 F8
F728 F8
F729 F8
F730 G8
I710 D4
I711 D6
I712 D4
I713 D5
I714 E3
I715 E3
I716 E5
I717 E3
I718 E5
I719 E5
I720 F5
I721 F4
I722 F5
I723 F4

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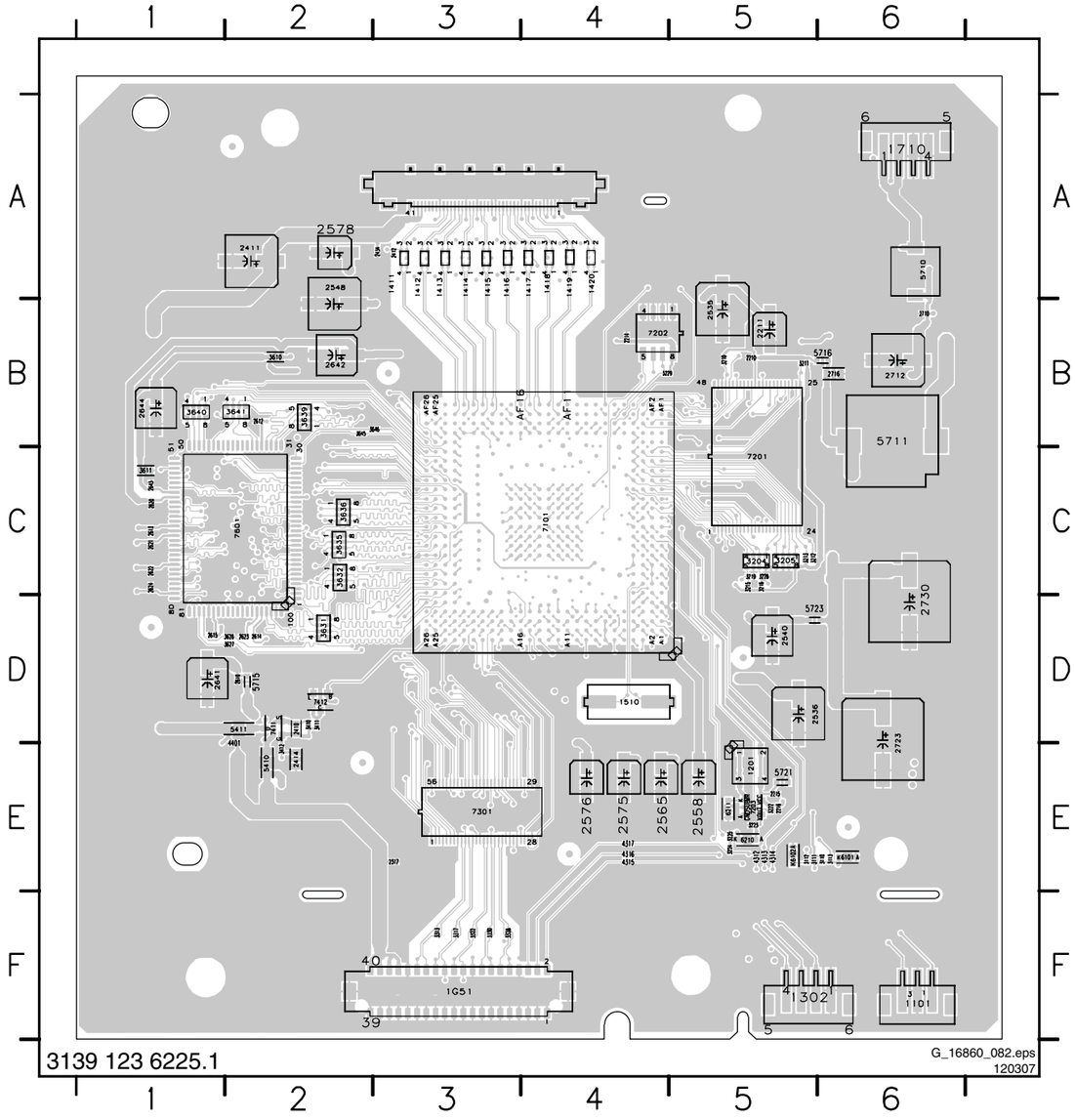
Layout 1080p Panel (Top Side)

1101	F6	1417	A4	2214	B4	2535	B5	2610	D2	2624	C1	2730	D6	3212	C5	3228	C5	3412	E2	3639	B2	4316	E4	5721	E5	7203	E5
1201	E5	1418	A4	2215	E5	2536	D5	2612	B2	2641	D1	3110	E6	3213	C5	3229	B4	3610	B2	3640	B1	4317	E4	5723	D5	7301	E3
1302	F5	1419	A4	2216	E5	2540	D5	2613	C1	2642	B2	3111	E5	3215	C5	3313	F3	3611	C1	3641	B2	4401	E2	6101	E6	7411	D2
1411	A3	1420	A4	2317	E3	2548	A2	2614	D2	2643	C1	3112	E5	3216	C5	3317	F3	3627	D2	3645	B2	5410	E2	6102	E5	7412	D2
1412	A3	1510	D4	2410	D2	2558	E5	2615	D1	2644	B1	3113	E6	3219	C5	3322	F3	3628	D2	3646	B3	5411	D2	6210	E5	7601	C2
1413	A3	1710	A6	2411	A2	2565	E4	2620	C1	2710	B6	3204	C5	3222	E5	3328	F3	3631	D2	4312	E5	5710	A6	6211	E5		
1414	A3	1G51	F3	2412	A3	2575	E4	2621	C1	2712	B6	3205	C5	3223	E5	3330	F3	3632	C2	4313	E5	5711	B6	7101	C4		
1415	A3	2210	B5	2414	E2	2576	E4	2622	C1	2716	B6	3210	B5	3224	E5	3410	D2	3635	C2	4314	E5	5715	D2	7201	C5		
1416	A3	2211	B5	2434	A3	2578	A2	2623	D2	2723	E6	3211	B5	3225	E5	3411	D2	3636	C2	4315	E4	5716	B6	7202	B4		



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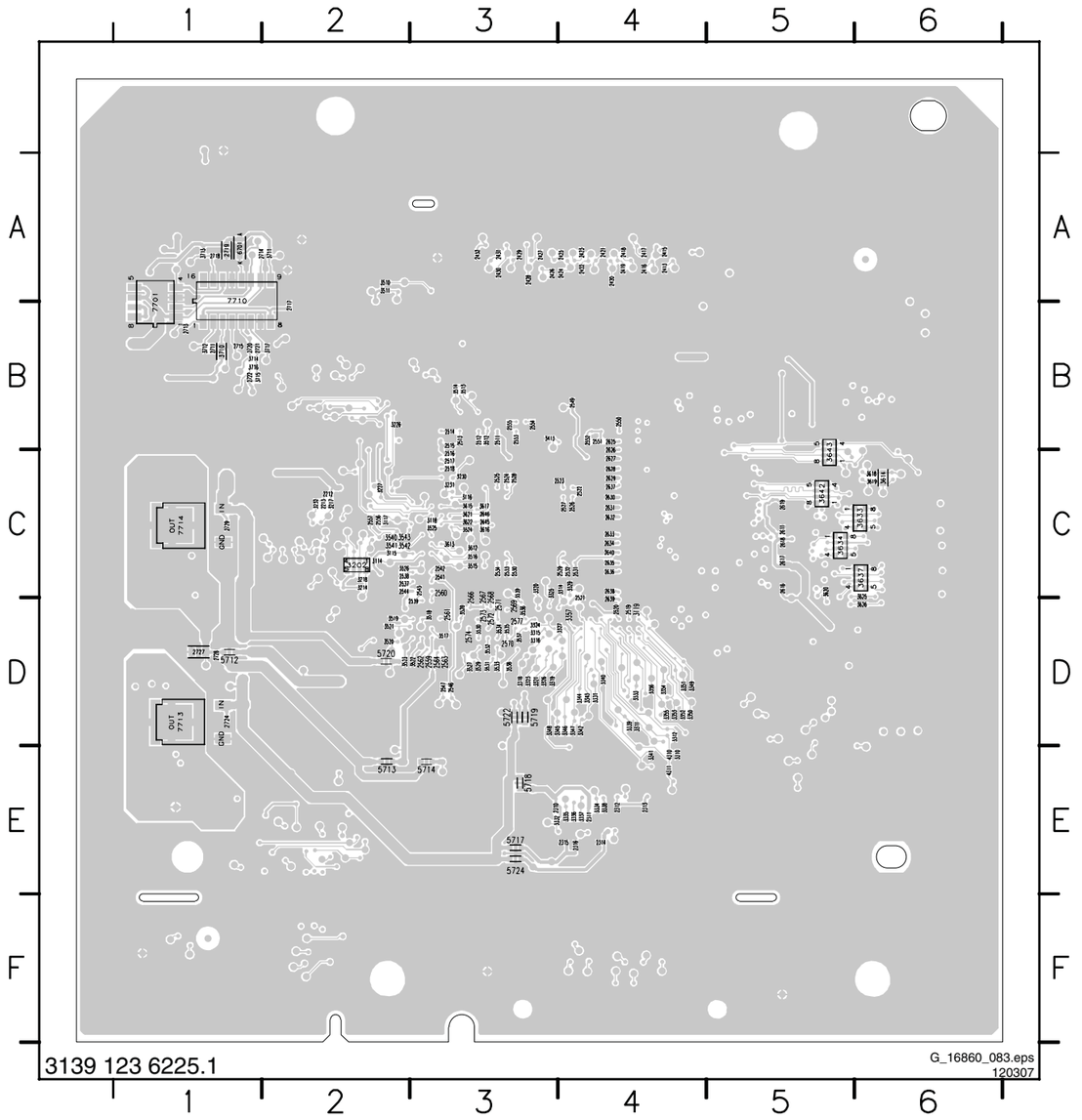
Layout 1080p Panel (Bottom Side)

2212	C2	2422	A4	2517	C3	2534	C3	2556	C2	2577	D3	2636	C4	2724	D1	3231	C3	3329	C4	3347	D4	3515	C3	3532	D3	3617	C3	3714	B1	7710	A1
2213	C2	2423	A4	2518	C3	2537	C2	2557	C2	2611	C5	2637	C4	2727	D1	3232	C2	3331	D4	3348	D3	3516	C3	3533	D3	3618	C6	3715	B1	7713	D1
2310	E3	2424	A4	2519	D4	2538	C2	2559	D3	2616	C5	2638	C4	2728	D1	3310	E4	3332	E3	3349	D4	3517	D3	3534	D3	3619	C6	3716	B1	7714	C1
2311	E4	2425	A4	2520	D4	2539	D3	2560	C3	2617	C5	2639	D4	2729	C1	3311	D4	3333	D4	3350	D4	3518	D3	3535	D3	3620	C5	3717	B2		
2312	E4	2426	A3	2521	D4	2541	C3	2561	D3	2618	C5	2640	C4	3114	C2	3312	D4	3334	E4	3351	D4	3519	D2	3536	D3	3621	C3	4310	E4		
2313	E4	2427	A3	2522	C4	2542	C3	2562	D3	2619	C5	2645	C3	3115	C2	3314	C4	3335	E4	3352	D4	3520	D2	3537	D3	3622	C3	4311	E4		
2314	E4	2428	A3	2523	C4	2543	C3	2563	D3	2625	B4	2646	C3	3116	C3	3315	D3	3336	E4	3353	D4	3521	D2	3538	D3	3625	C6	5712	D1		
2315	E4	2429	A3	2524	C3	2544	C2	2564	D3	2626	C4	2711	B1	3117	C2	3316	D3	3337	E4	3354	D4	3522	D3	3539	C3	3626	D6	5713	E2		
2316	E4	2430	A3	2525	C3	2546	D3	2566	D3	2627	C4	2713	B1	3118	C3	3318	D3	3338	E4	3355	D4	3523	D2	3540	C2	3633	C6	5714	E3		
2413	A4	2431	A3	2526	C4	2547	D3	2567	C3	2628	C4	2714	A1	3119	D4	3319	D3	3339	D4	3356	D4	3524	C3	3541	C2	3634	C5	5717	E3		
2415	A4	2432	A3	2527	C4	2549	B4	2568	D3	2629	C4	2715	B1	3202	C2	3320	C3	3340	D4	3357	D4	3525	C3	3542	C2	3637	C6	5718	E3		
2416	A4	2511	B3	2528	C3	2550	B4	2569	D3	2630	C4	2717	B2	3214	C2	3321	D3	3341	E4	3413	B3	3526	C2	3543	C2	3642	C5	5719	D3		
2417	A4	2512	B3	2529	C4	2551	B4	2570	D3	2631	C4	2718	A1	3217	C2	3323	D3	3342	D4	3510	A2	3527	D3	3612	C3	3643	C5	5720	D2		
2418	A4	2513	B3	2530	C3	2552	B4	2571	D3	2632	C4	2719	A1	3218	C2	3324	D3	3343	D4	3511	A2	3528	D3	3613	C3	3710	B1	5722	D3		
2419	A4	2514	B3	2531	C4	2553	B3	2572	D3	2633	C4	2720	B1	3226	B2	3325	C3	3344	D4	3512	B3	3529	D3	3614	C6	3711	A2	5724	E3		
2420	A4	2515	B3	2532	C4	2554	B3	2573	D3	2634	C4	2721	B1	3227	C2	3326	D3	3345	D3	3513	B3	3530	D3	3615	C3	3712	B1	6701	A1		
2421	A4	2516	C3	2533	C3	2555	B3	2574	D3	2635	C4	2722	B1	3230	C3	3327	D4	3346	D4	3514	B3	3531	D3	3616	C3	3713	A1	7701	B1		



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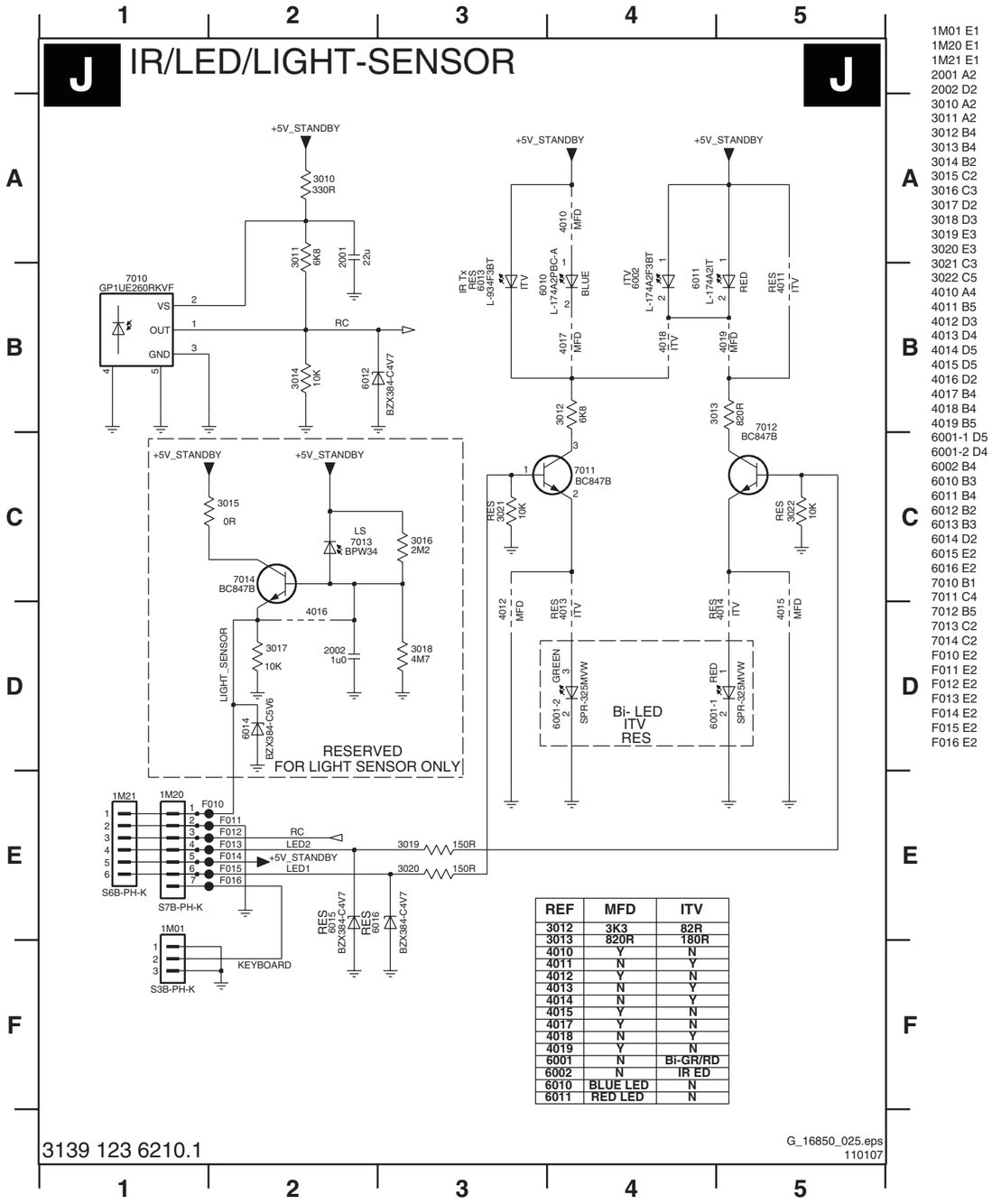
Front IR / LED Panel (ME7)



REF	MFD	ITV
3012	3K3	82R
3013	820R	180R
4010	Y	N
4011	N	Y
4012	Y	N
4013	N	Y
4014	N	Y
4015	Y	N
4017	Y	N
4018	N	Y
4019	Y	N
6001	N	Bi-GR/RD
6002	N	IR ED
6010	BLUE LED	N
6011	RED LED	N

1M01 E1
1M20 E1
1M21 E1
2001 A2
2002 D2
3010 A2
3011 A2
3012 B4
3013 B4
3014 B2
3015 C2
3016 C3
3017 D2
3018 D3
3019 E3
3020 E3
3021 C3
3022 C5
4010 A4
4011 B5
4012 D3
4013 D4
4014 D5
4015 D5
4016 D2
4017 B4
4018 B4
4019 B5
6001-1 D5
6001-2 D4
6002 B4
6010 B3
6011 B4
6012 B2
6013 B3
6014 D2
6015 E2
6016 E2
7010 B1
7011 C4
7012 B5
7013 C2
7014 C2
F010 E2
F011 E2
F012 E2
F013 E2
F014 E2
F015 E2
F016 E2

Personal Notes:

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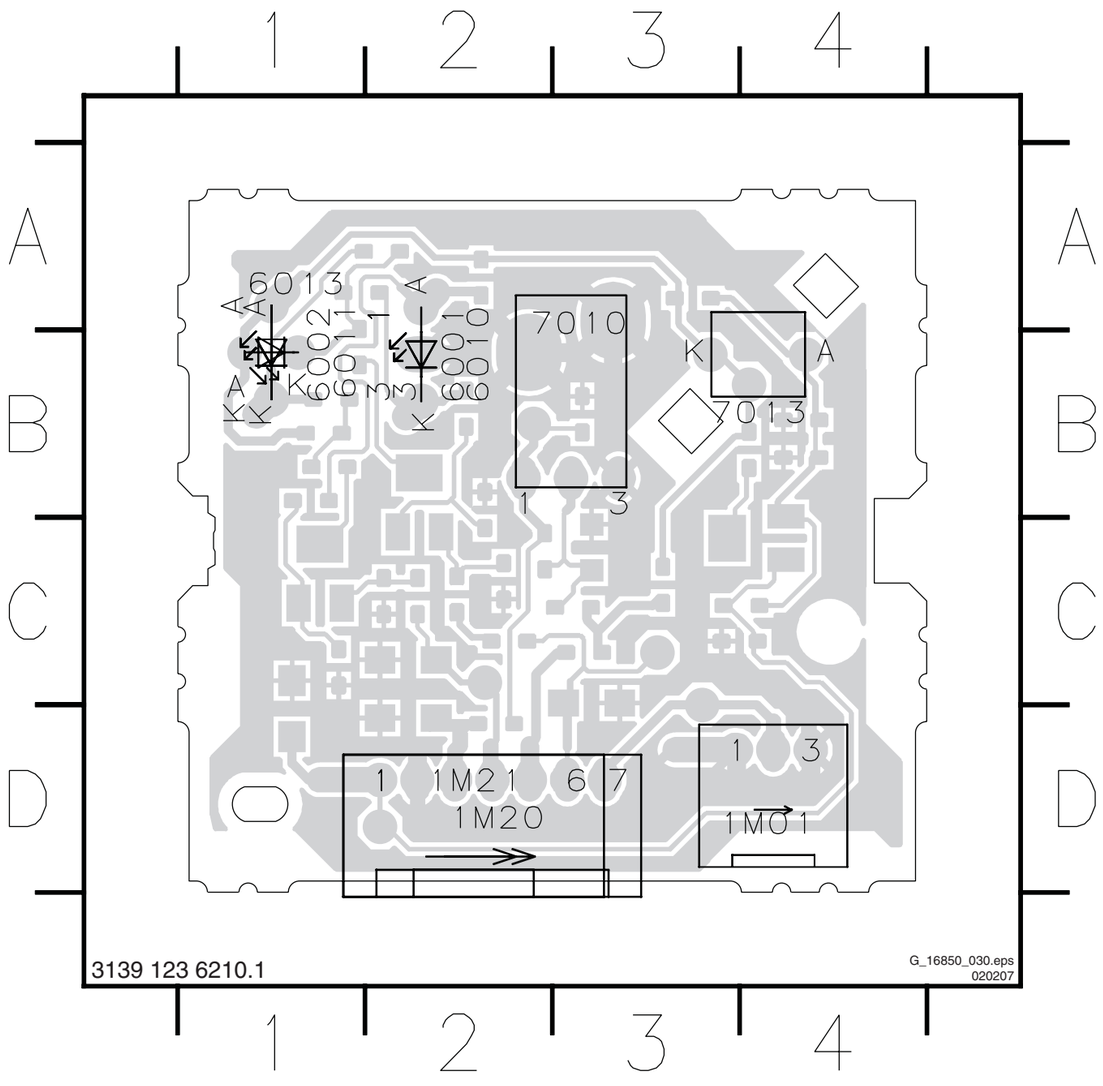
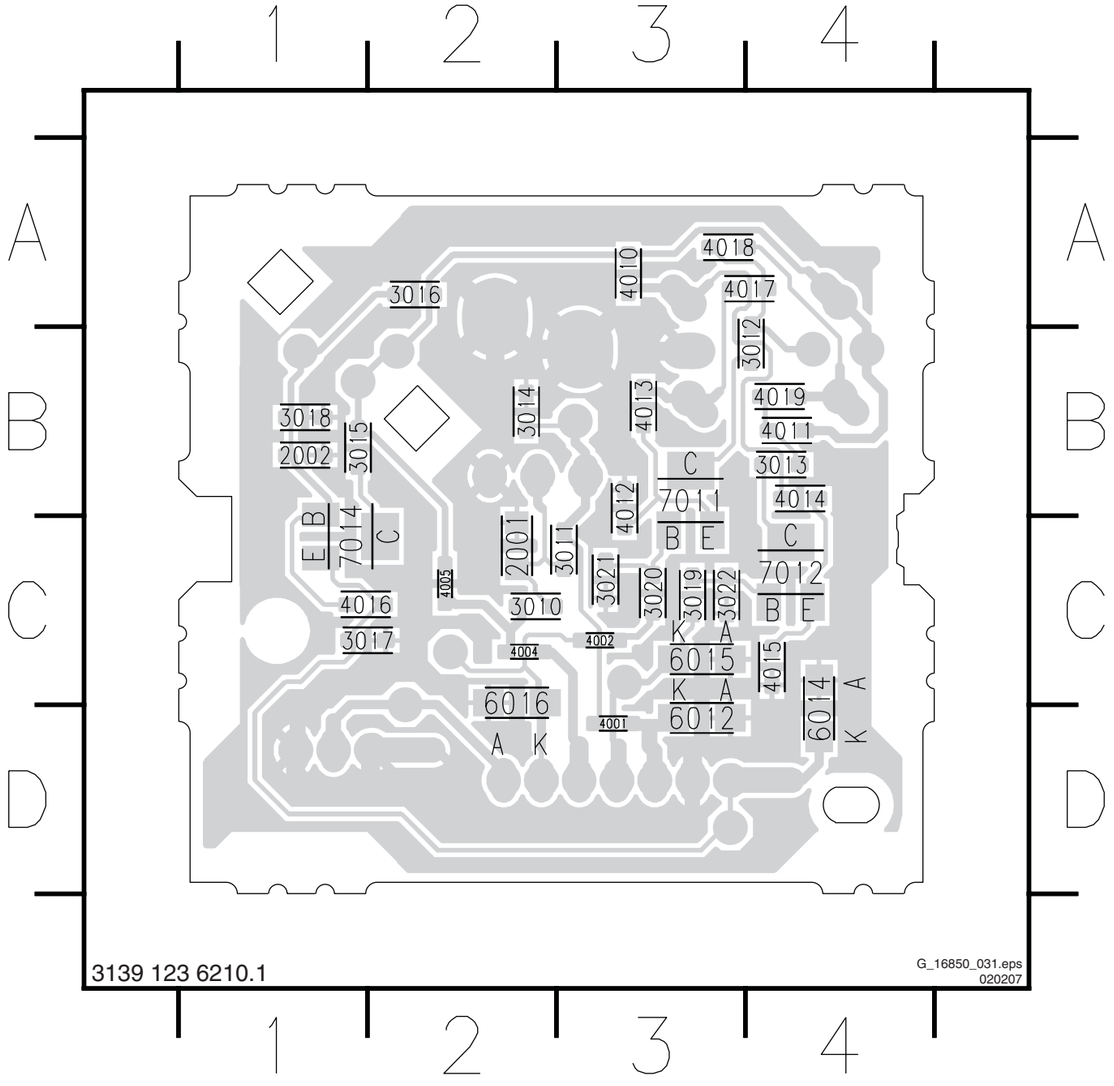
Layout Front IR / LED Panel (ME7) (Top Side)

1M01	D4	6001	B2	6011	B1	7013	B4
1M20	D2	6002	B1	6013	A1		
1M21	D2	6010	B2	7010	A3		

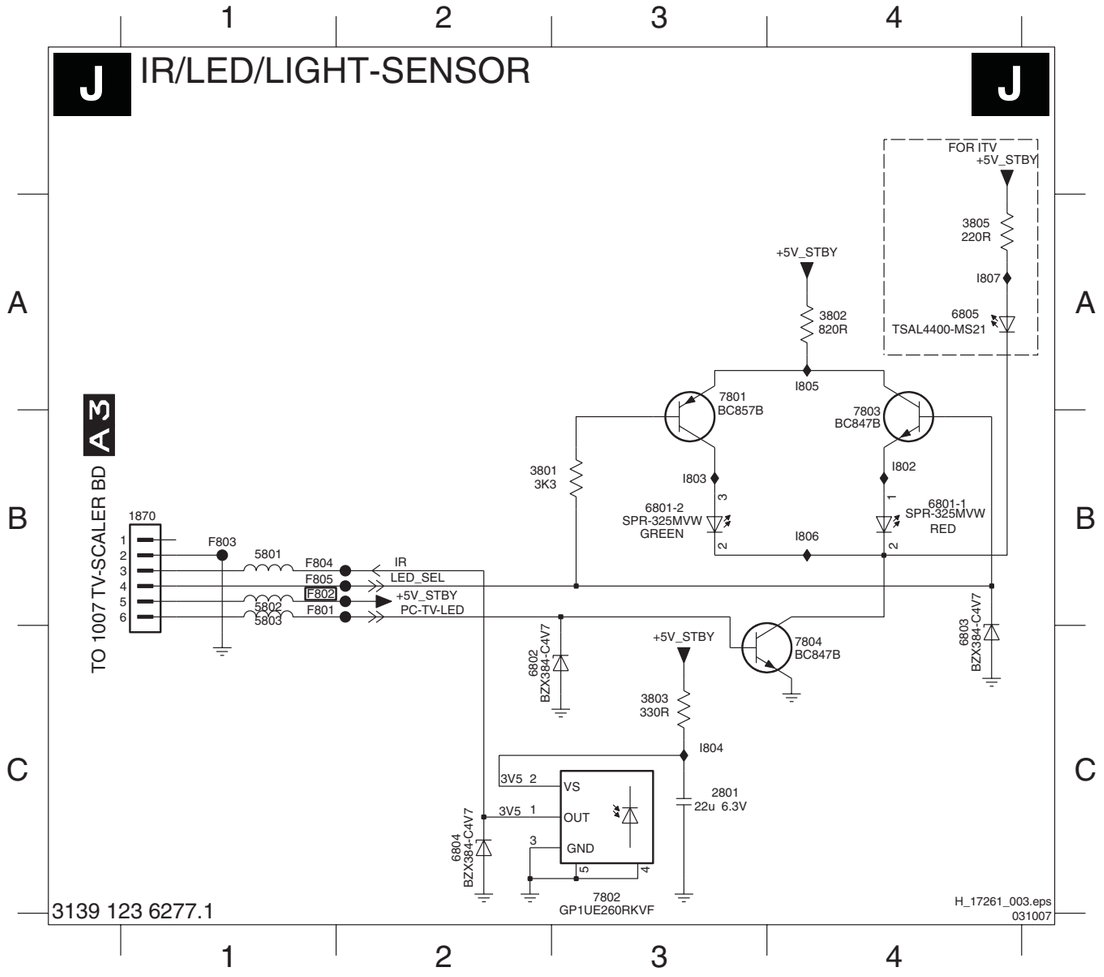


Layout Front IR / LED Panel (ME7) (Bottom Side)

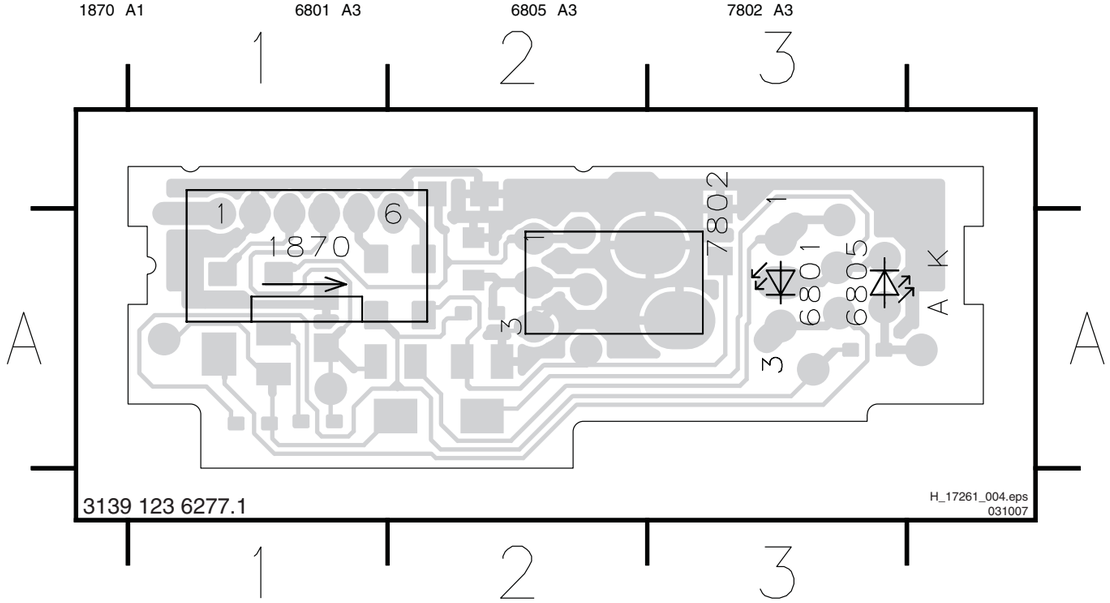
2001	C2	3014	B2	3020	C3	4005	C2	4015	C4	6014	D4
2002	B1	3015	B1	3021	C3	4010	A3	4016	C1	6015	C3
3010	C2	3016	A2	3022	C3	4011	B4	4017	A4	6016	C2
3011	C3	3017	C1	4001	D3	4012	B3	4018	A3	7011	B3
3012	B4	3018	B1	4002	C3	4013	B3	4019	B4	7012	C4
3013	B4	3019	C3	4004	C2	4014	B4	6012	D3	7014	C1



Front IR / LED Panel (ME5P)

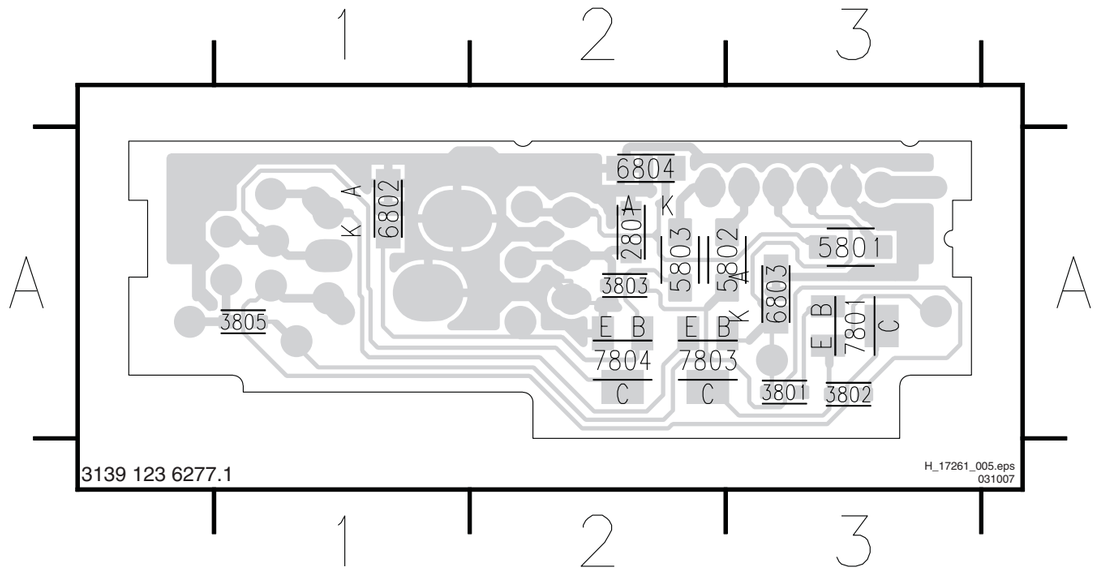


Layout Front IR / LED Panel (ME5P) (Top Side)



Layout Front IR / LED Panel (ME5P) (Bottom Side)

2801 A2
3801 A3
3802 A3
3803 A2
3805 A1
5801 A3
5802 A3
5803 A2
6802 A1
6803 A3
6804 A2
7801 A3
7803 A2
7804 A2



Personal Notes:

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8. Alignments

Index of this chapter:
8.1 General Alignment Conditions
8.2 Hardware Alignments
8.3 Software Alignments
8.4 Option Settings

Note: Figures below can deviate slightly from the actual situation, due to the different set executions.

General: The Service Default Mode (SDM) and Service Alignment Mode (SAM) are described in chapter 5. Menu navigation is done with the CURSOR UP, DOWN, LEFT or RIGHT keys of the remote control transmitter.

8.1 General Alignment Conditions

Perform all electrical adjustments under the following conditions:
- Power supply voltage (depends on region):
  - AP-NTSC: 120 V_{AC} or 230 V_{AC} / 50 Hz (± 10%).
  - AP-PAL-multi: 120 - 230 V_{AC} / 50 Hz (± 10%).
  - EU: 230 V_{AC} / 50 Hz (± 10%).
  - LATAM-NTSC: 120 - 230 V_{AC} / 50 Hz (± 10%).
  - US: 120 V_{AC} / 60 Hz (± 10%).
- Connect the set to the mains via an isolation transformer with low internal resistance.
- Allow the set to warm up for approximately 15 minutes.
- Measure voltages and waveforms in relation to correct ground (e.g. measure audio signals in relation to AUDIO_GND).
  Caution: It is not allowed to use heatsinks as ground.
- Test probe: Ri > 10 Mohm, Ci < 20 pF.
- Use an isolated trimmer/screwdriver to perform alignments.

8.2 Hardware Alignments

There are no hardware alignments foreseen for this chassis, but below find an overview of the most important DC voltages on the SSB. These can be used for checking proper functioning of the DC/DC converters.

		Specifications (V)			
Description	Test Point	Min.	Typ.	Max.	Diagram
+AUDIO_POWER	FB21	11.40	12.00	12.60	B02_DC-DC
-AUDIO_POWER	FB23	-11.40	-12.00	-12.60	B02_DC-DC
+12V_DISP	FB34	11.40	12.00	12.60	B02_DC-DC
+8V	F401	7.60	8.00	8.40	B04C_Audio Proc.
+5V_STANDBY	FB27	4.94	5.20	5.46	B02_DC-DC
+5V_SW	FB16	4.93	5.19	5.45	B02_DC-DC
+5V_D	I411	4.75	5.00	5.25	B04C_Audio Proc.
+5V_AUD	I410	4.75	5.00	5.25	B04C_Audio Proc.
+5V_TUN	I115	4.75	5.00	5.25	B03_Tuner IF
+3V3_STBY	FB13	3.10	3.30	3.50	B02_DC-DC
+3V3_SW	FB17	3.1	3.3	3.5	B02_DC-DC
+3V3_MOJO	FB19	3.1	3.3	3.5	B02_DC-DC
+3V3	FJ01	3.2	3.27	3.4	B03F_DVB-MOJO
+3V3FE	FF14	3.2	3.27	3.4	B03B_DVB-Demod
+1V8S_SW	FB11	1.70	1.80	1.90	B02_DC-DC
+1V2_MOJO	FB20	1.18	1.25	1.31	B02_DC-DC
+1V2_CORE	FG39	1.14	1.24	1.34	B03D_DVB-MOJO
VDISP	F210	11.40	12.00	12.60	B04B_Video proc.

8.3 Software Alignments

With the software alignments of the Service Alignment Mode (SAM) the Tuner and RGB settings can be aligned.
To store the data: Use the RC button “Menu” to switch to the main menu and next, switch to “Stand-by” mode.

8.3.1 Tuner Adjustment (RF AGC Take Over Point)

Purpose: To keep the tuner output signal constant as the input signal amplitude varies.

The LC7.xx chassis comes with two tuner types: the UV1318S for the analogue sets (LC7.1x) and the TD1316AF for the hybrid sets (LC7.2x).

For the digital tuner TD1316AF, no alignment is necessary, as the AGC alignment is done automatically (standard value: “15”), even during analogue reception.

The analogue tuner UV1318S can also use the default value of “15”, however in case of problems use the following method (use multimeter and RF generator):
- Apply a vision IF carrier of 38.9 MHz (105 dBµV = 178 mVrms) to test point F111 (input via 50 Ω coaxial cable terminated with an RC network of series 10 nF with 120 ohm to ground).
- Measure voltage on pin 1 of the tuner.
- Adjust AGC (via SAM menu: TUNER -> AGC), until voltage on pin 1 is 3.3 +0.5/-1.0 V.
- Store settings and quit SAM.

8.3.2 RGB Alignment

Before alignment, choose “TV MENU” -> “Picture” and set:
- “Brightness” to “50”.
- “Color” to “50”.
- “Contrast” to “100”.

White Tone Alignment:
- Activate SAM.
- Select “RGB Align.” -> “White Tone” and choose a color temperature.
- Use a 100% white screen as input signal and set the following values:
  - All “White point” values initial to “256”.
  - All “BlackL Offset” values to “0”.

In case you have a color analyzer:
- Measure with a calibrated (phosphor- independent) color analyzer (e.g. Minolta CA-210) in the centre of the screen. Consequently, the measurement needs to be done in a dark environment.
- Adjust the correct x, y coordinates (while holding one of the White point registers R, G or B on “256”) by means of decreasing the value of one or two other white points to the correct x,y coordinates (see table “White D alignment values”). Tolerance: dx: ± 0.004, dy: ± 0.004.
- Repeat this step for the other color Temperatures that need to be aligned.
- When finished return to the SAM root menu and press STANDBY on the RC to store the aligned values to the NVM.

Table 8-1 White D alignment values

Value	Cool (11000 K)	Normal (9000 K)	Warm (6500 K)
x	0.278	0.289	0.314
y	0.278	0.291	0.319

If you do **not** have a color analyzes, you can use the default values. This is the next best solution. The default values are average values coming from production (statistics).
- Set the RED, GREEN and BLUE default values per temperature according to the values in the “Tint settings” table.

- When finished return to the SAM root menu and press STANDBY on the RC to store the aligned values to the NVM.

Table 8-2 Tint settings

Alignment	26" (*)	32"	37" (*)	42"	52"
COOL_RED	t.b.d.	250	t.b.d.	249	255
COOL_GREEN	t.b.d.	251	t.b.d.	241	254
COOL_BLUE	t.b.d.	246	t.b.d.	246	238
NORMAL_RED	t.b.d.	252	t.b.d.	251	255
NORMAL_GREEN	t.b.d.	246	t.b.d.	238	247
NORMAL_BLUE	t.b.d.	228	t.b.d.	229	219
WARM_RED	t.b.d.	252	t.b.d.	246	255
WARM_GREEN	t.b.d.	232	t.b.d.	222	233
WARM_BLUE	t.b.d.	197	t.b.d.	199	179

(*) This data was not available at the time of writing, but for default settings use the column next to the column involved on the right.

Black Level Offset Alignment
- Activate SAM.
- Select “RGB Align.” -> “BlackL Offset” and choose a color.
- Set all “BlackL Offset” values to “0”.
- When finished return to the SAM root menu and press STANDBY on the RC to store the aligned values to the NVM.

Note: For models with “Pixel Plus”, the “Black Offset” (black level offset) should NOT be changed in SAM. These offset values of RGB should be set to “0”, and should **NOT** be adjusted. Any adjustment of these values will affect the low light white balance.

ADC YPbPr Gray Scale Alignment
When the grey scale is not correct, use this alignment:
- Activate SAM.
- Select “NVM Editor”.
- Enter address “26(dec)” (ADR).
- Set value (VAL) to “197(dec) ± 25”.
- Store (STORE) the value.

8.4 Option Settings

8.4.1 Introduction

The microprocessor communicates with a large number of I^2C ICs in the set. To ensure good communication and to make digital diagnosis possible, the microprocessor has to know which ICs to address. The presence/absence of these specific ICs (or functions) is made known by the option codes.

Notes:
- After changing the option(s), save them with the STORE command.
- The new option setting becomes active after the TV is switched “off” and “on” again with the mains switch (the EEPROM is then read again).

8.4.2 How To Set Option Codes

When the NVM is replaced, all options will require resetting. To be certain that the factory settings are reproduced exactly, you must set all option numbers. You can find the correct option numbers in table “Option Codes OP1...OP7” below.

How to Change Options Codes
An option code (or “option byte”) represents eight different options (bits). When you change these numbers directly, you can set all options very quickly. All options are controlled via seven option numbers (OP1... OP7).
Activate SAM and select “Options”. Now you can select the option byte (OP1.. OP7) with the CURSOR UP/ DOWN keys, and enter the new 3 digit (decimal) value. For the correct factory default settings, see the table “Option codes OP1...OP7” below. For more detailed information, see the second table “Option codes at bit level“. If an option is set (value “1”), it represents a certain decimal value.
When all the correct options (bits) are set, the sum of the decimal values of each Option Byte (OP) will give the option code.

Table 8-3 Option codes OP1...OP7

Sets 12NC	Sets Type number	Panel Type	Panel Code (Decimal)	Option Byte						
				1	2	3	4	5	6	7
867 0000 26291	26PFL5332/78	LPL: LC260WX2-SLB2	045	000	029	148	255	009	008	004
		AUO: T260XW03 V1	067							
		CMO: V260B1-L03	068							
867 0000 30975	32PFL5332/78	LPL: LC320W01-SL06	046	000	029	148	255	009	008	001
		AUO: T315XW02 VD	091							
		CMO: V315B1-L05	069							
867 0000 30982	37PFL5332/78	LPL: LC370WX1-SLB1	071	000	029	148	255	009	008	002
		AUO: T370XW02 V5	072							
867 0000 30983	42PFL5332/78	LPL: LC420WX3-SLA1	073	000	029	148	255	009	008	002
		AUO: T420XW01 V8	076							
		LPL: LC420WX5-SLD1	107							
867 0000 31883	32PFL7342/78	LPL: LC320W01-SL06	046	000	061	148	255	009	008	001
		AUO: T315XW02 VD	091							
		CMO: V315B1-L05	069							
867 0000 31884	42PFL7342/78	LPL: LC420WX3-SLA1	073	000	061	148	255	009	008	007
		AUO: T420XW01 V8	076							
		LPL: LC420WX5-SLD1	107							
867 0000 30984	52PFL5432/78	Sharp: LK520D3LZ1X-LD	098	000	157	148	255	009	008	005
867 0000 26425	26PFL5322/77	LPL: LC260WX2-SLB2	045	000	029	148	255	009	008	004
		AUO: T260XW03 V1	067							
		CMO: V260B1-L03	068							
867 0000 30989	32PFL5332/77	LPL: LC320W01-SL06	046	000	029	148	255	009	008	001
		AUO: T315XW02 VD	091							
		CMO: V315B1-L05	069							
867 0000 30991	37PFL5332/77	LPL: LC370WX1-SLB1	071	000	029	148	255	009	008	002
		AUO: T370XW02 V5	072							
867 0000 30992	42PFL5332/77	LPL: LC420WX3-SLA1	073	000	029	148	255	009	008	002
		AUO: T420XW01 V8	076							
		LPL: LC420WX5-SLD1	107							
867 0000 31885	32PFL7342/77	LPL: LC320W01-SL06	046	000	061	148	255	009	008	001
		AUO: T315XW02 VD	091							
		CMO: V315B1-L05	069							
867 0000 31886	42PFL7342/77	LPL: LC420WX3-SLA1	073	000	061	148	255	009	008	007
		AUO: T420XW01 V8	076							
		LPL: LC420WX5-SLD1	107							
867 0000 30993	52PFL5432/77	Sharp: LK520D3LZ1X-LD	098	000	157	148	255	009	008	005
867 0000 32242	26PFL5322/45	LPL: LC260WX2-SLB2	045	000	029	148	255	009	008	000
		AUO: T260XW03 V1	067							
		CMO: V260B1-L03	068							
867 0000 32243	32PFL5332/45	LPL: LC320W01-SL06	046	000	029	148	255	009	008	001
		AUO: T315XW02 VD	091							
		CMO: V315B1-L05	069							
867 0000 32244	42PFL5332/45	LPL: LC420WX3-SLA1	073	000	029	148	255	009	008	002
		AUO: T420XW01 V8	076							
		LPL: LC420WX5-SLD1	107							

Option Bit Overview
Below find an overview of the Option Codes on **bit** level.

Table 8-4 Option codes at bit level (OP1-OP4)

Option Byte & Bit	Dec. Value	Option Name	Description
Byte OP1			
Bit 7 (MSB)	128	Reserved	Not Used (Reserved)
Bit 6	64	CHINA	ON = SW is for CHINA only OFF = SW is for Non-China AP cluster
Bit 5	32	DTV_CHINA	ON = DTV_CHINA will be available (Reserved) OFF = DTV_CHINA will not be available
Bit 4	16	DTV_EU	ON = DTV will be available OFF = DTV will not be available
Bit 3	8	UK_PNP	ON = UK PNP is available OFF = UK PNP is not available
Bit 2	4	VIRGIN_MODE	ON = Virgin Mode (PNP) is available OFF = Virgin Mode (PNP) is not available
Bit 1	2	ACI	ON = ACI is available OFF = ACI is not available
Bit 0 (LSB)	1	ATS	ON = ATS is available OFF = ATS is not available
Total DEC Value			
Byte OP2			
Bit 7 (MSB)	128	1080P	ON = 1080p is available OFF = 1080p is not available
Bit 6	64	LIGHT_SENSOR	ON = Light Sensor is available OFF = Light Sensor is not available
Bit 5	32	AMBILIGHT	ON = Ambilight Feature will be available OFF = Ambilight Feature will not be available
Bit 4	16	BACKLIGHT_DIMMING	ON = Backlight Dimming is available OFF = Backlight Dimming is not available
Bit 3	8	HUE	ON = Hue is available OFF = Hue is not available
Bit 2	4	2D3DCF	ON = 3D Comb Filter is available OFF = 2D Comb Filter is available
Bit 1	2	WSSB	ON = WSS is available OFF = WSS is not available
Bit 0 (LSB)	1	WIDE_SCREEN	ON = TV is 16 × 9 set OFF = TV is 4 × 3 set
Total DEC Value			
Byte OP3			
Bit 7 (MSB)	128	CVI2	ON=CVI1 (YPbPr) (For ROW)
Bit 6	64	Reserved	Not Used (Reserved)
Bit 5	32	Reserved	Not Used (Reserved)
Bit 4	16	VCHIP	ON = VChip is available OFF = VChip is not available
Bit 3	8	VIDEO_TEXT	ON = Video-TXT is available OFF = Video-TXT is not available
Bit 2	4	STEREO_DBX	ON = Stereo DBX detection is available (LATAM) OFF = Stereo DBX detection is not available
Bit 1	2	STEREO_NICAM_2CS	ON = Stereo NICAM 2CS detection is available (EU/AP/China) OFF = Stereo NICAM 2CS detection is not available
Bit 0 (LSB)	1	LIP_SYNC	ON = Lip Sync is available OFF = Lip Sync is not available
Total DEC Value			
Byte OP4			
Bit 7 (MSB)	128	HDMI2	ON = HDMI2 is available OFF = HDMI2 is not available
Bit 6	64	HDMI1	ON = HDMI1 is available OFF = HDMI1 is not available
Bit 5	32	VGA	ON = VGA is available OFF = VGA is not available
Bit 4	16	SVHS3	ON = SVHS3 is available OFF = SVHS3 is not available
Bit 3	8	AV3	ON = AV3 is available OFF = AV3 is not available
Bit 2	4	CVI	ON = CVI is available OFF = CVI is not available
Bit 1	2	SVHS2	ON = SVHS2 is available OFF = SVHS2 is not available
Bit 0 (LSB)	1	AV2	ON = AV2 is available OFF = AV2 is not available
Total DEC Value			

Table 8-5 Option codes at bit level (OP5-OP7)

Option Byte & Bit	Dec. Value	Option Name	Description
Byte OP5			
Bit 7 (MSB)	128	NVM_CHECK	ON = NVM (range) checking is available OFF = NVM (range) checking is not available
Bit 6	64	Reserved	Not Used (Reserved)
Bit 5	32	Reserved	Not Used (Reserved)
Bit 4	16	MP_ALIGN	ON = Using multi-point alignment for Gamma & White Point OFF = Using old way for Gamma (pre-defined) & WP alignment
Bit 3	8	SYS_RECVRY	ON = System Recovery is available OFF = System Recovery is not available
Bit 2	4	SL_WIRED	ON = BDS Smart Loader Wired is available OFF = BDS Smart Loader Wired is not available
Bit 1	2	HOTEL	ON = Hotel/BDS is available OFF = Hotel/BDS is not available
Bit 0 (LSB)	1	SS_DEMO	ON = Split Screen Demo is available OFF = Split Screen is not available
Total DEC Value			
Byte OP6			
Bit 7 (MSB)	128	Reserved	Not Used (Reserved)
Bit 6	64	Reserved	Not Used (Reserved)
Bit 5	32	Reserved	Not Used (Reserved)
Bit 4	16	Reserved	Not Used (Reserved)
Bit 3	8	TUNER PROFILE	0 = ATV_EU_PHILIPS UV1318S/AIH-3 1 = ATV_EU_Panasonic EN57K28G3F 2 = DTV_EU_PHILIPS TD1316AF/IHP-2 4 = ATV_AP_PHILIPS UV1316E/AIH-4 5 = ATV_AP_Tuner2 (Reserved) 6 = ATV_CHINA_ALPS TEDE9-286B 7 = ATV_CHINA_Tuner2 (Reserved) 8 = ATV_LATAM_PHILIPS UV1338/AIH-4 9 = ATV_LATAM_Tuner2 (Reserved) 10 = DTV_CHINA_Tuner1 (Reserved) 11 = DTV_CHINA_Tuner2 (Reserved) 12 = Not Used (Reserved) 13 = Not Used (Reserved) 14 = Not Used (Reserved) 15 = Not Used (Reserved)
Bit 2	4		
Bit 1	2		
Bit 0 (LSB)	1		
Total DEC Value			
Byte OP7			
Bit 7 (MSB)	128	Reserved	Not Used (Reserved)
Bit 6	64	Reserved	Not Used (Reserved)
Bit 5	32	Reserved	Not Used (Reserved)
Bit 4	16	CABINET PROFILE	0 = Cabinet_Profile_26_LCD_ME7 1 = Cabinet_Profile_32_LCD_ME7 2 = Cabinet_Profile_37_42_47_LCD_ME7 3 = Cabinet_Profile_42_50_PDP_ME7 4 = Cabinet_Profile_26_LCD_ME5P 5 - 32 = Reserved
Bit 3	8		
Bit 2	4		
Bit 1	2		
Bit 0 (LSB)	1		
Total DEC Value			

9. Circuit Descriptions, Abbreviation List, and IC Data Sheets

Index of this chapter:

9.1 Introduction
9.2 LCD Power Supply
9.3 DC/DC converters
9.4 Front-End
9.5 Video Processing
9.6 Memory addressing
9.8 Audio Processing
9.9 HDMI
9.10 Abbreviation List
9.11 IC Data Sheets

Notes:

- Only **new** circuits (circuits that are not published recently) are described.
- Figures can deviate slightly from the actual situation, due to different set executions.
- For a good understanding of the following circuit descriptions, please use the Wiring, Block (chapter 6) and Circuit Diagrams (chapter 7). Where necessary, you will find a separate drawing for clarification.

9.1 Introduction

The LC7.x (development name “LC07”) is a new global chassis for the year 2007 (LC7.1 is the analogue range, LC7.2 is the digital range). It covers a screen size of 26 to 47 inch for LCD and 42 to 50 inch for Plasma sets. Most sets come with a new styling called “ME7”. Some key components are:

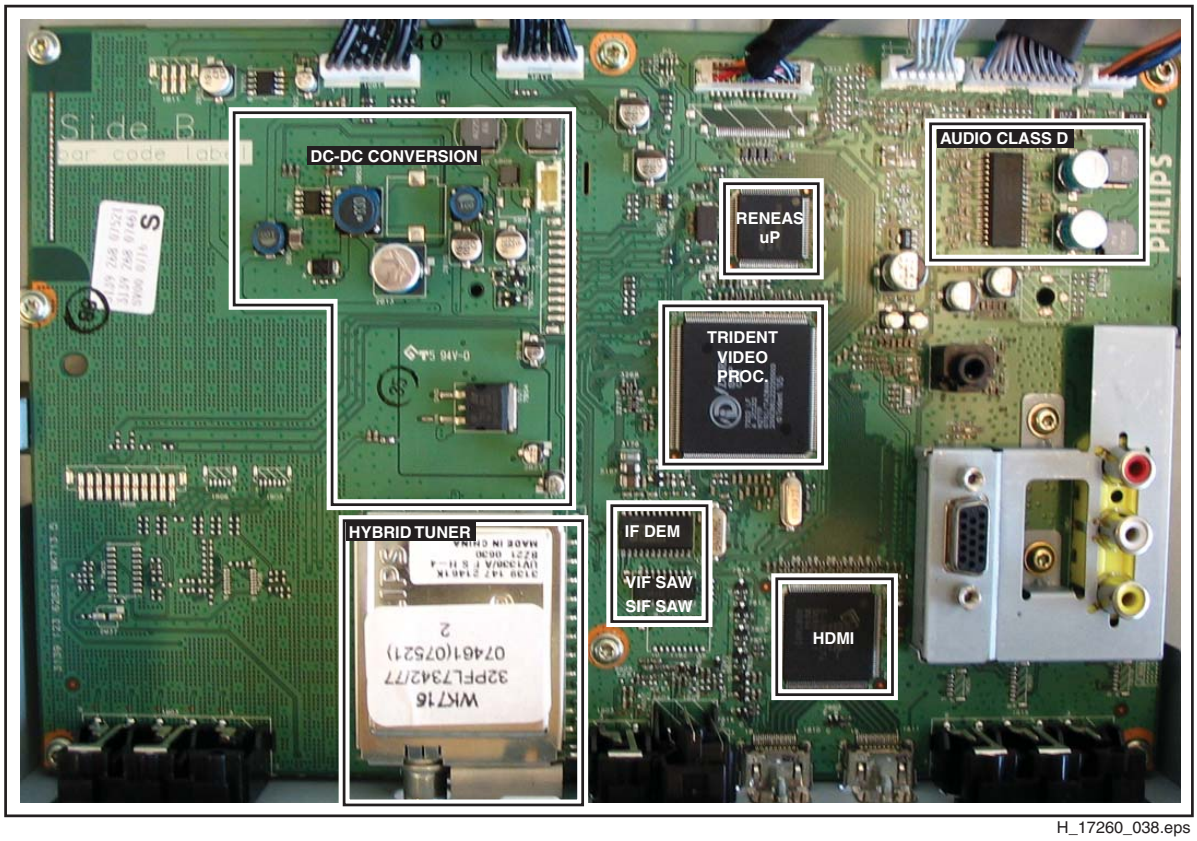
- **Audio**: Sound processing is performed by a multi-standard sound processor MSP4450 (item 7411)
- **Video**: Video processing is performed by the Trident video processor SVP CX32-LF (item 7202).

For analogue reception, a standard IF demodulator is used, whereas digital input signals (DVB-T; only applicable in some regions) are processed through a COFDM channel decoder together with an MPEG decoder. A so-called “Reneas” microprocessor performs the control functionality.

Important features of this chassis are:

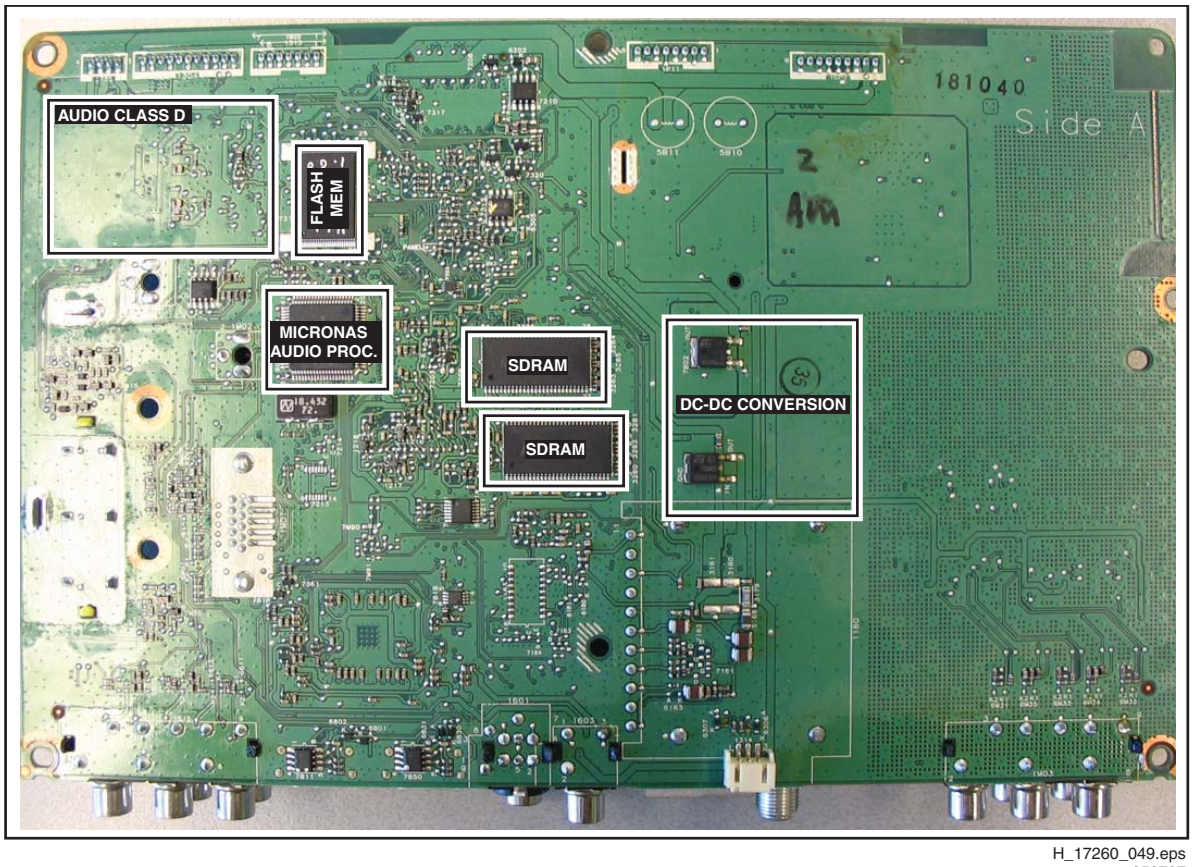
- **AmbiLight:** LED AmbiLight (where applicable) is introduced as the successor of glass-tube AmbiLight
- **1080p Full HD** (where applicable).

9.1.1 SSB Cell Layout



H_17260_038.eps
05077

Figure 9-1 SSB top view



H_17260_049.eps
050707

Figure 9-2 SSB bottom view

9.2 LCD Power Supply

The Power Supply Unit (PSU) in this chassis is a buy-in and is a black-box for Service. When defective, a new panel must be ordered and the defective panel must be sent for repair, unless the main fuse of the unit is broken. Always replace the fuse with one with the correct specifications! This part is available in the regular market.

Three different PSU can be used in this chassis:
- 26 and 32 inch sets use a “Delta” PSU
- 37 and 42 inch sets use a “PPS” (Philips Power Solutions) PSU
- 47 inch sets use a “Delta” PSU.

Figure “Overview of PSU connectivity” shows the connectivity of the Power Supply Unit with the other panels in the set.

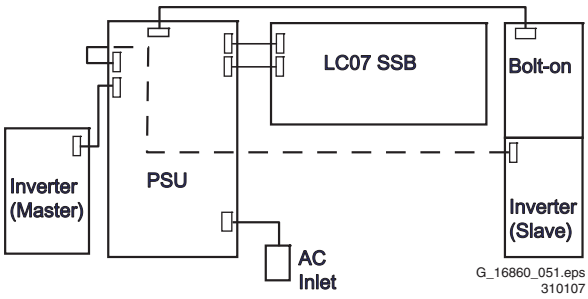


Figure 9-3 Overview of PSU connectivity

All Power Supply Units deliver the following voltages to the chassis:
- +24 V to the inverters
- +12 V to SSB
- +12 V and -12 V to Audio Supply
- 12 V to Bolt-on Supply (where applicable)
- +5.2 V Standby voltage.

9.3 DC/DC converters

A switch generates the +5.2 V (+5V_SW) from the +5.2 V (+5V_STANDBY) supply voltage. For LCD sets, this switch is mounted on-board the SSB. For PDP sets, this switch is mounted on the Power Supply Panel. This results in the +5V_STANDBY (and +5V_SW for PDP sets) voltage(s), coming from the Power Supply Unit, is (are) used as input for the on-board DC/DC converters.
They deliver the following voltages to the board:
- +3.3 V (+3V3_STBY)
- +5.2 V (+5V_SW) (only for LCD sets)
- +1.8 V (+1V8S_SW)
- +34 V (+VTUN)
- +3.3 V (+3V3_SW)
- +3.3 V (+3V3_MOJO)
- +1.2 V (+1V2_MOJO)

An overview can be found in figure “DC-DC converter block diagram”.

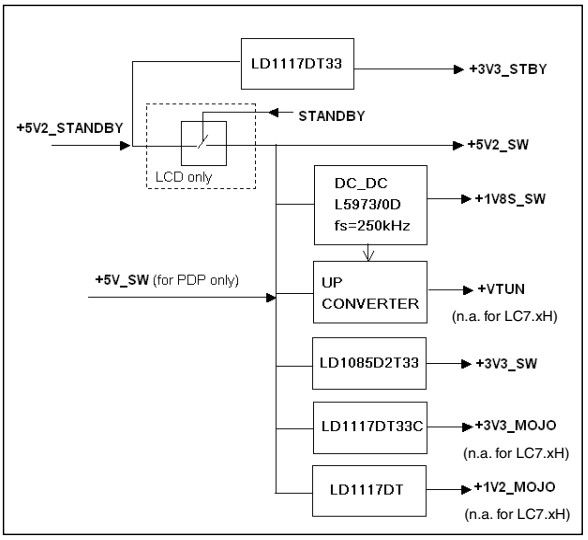


Figure 9-4 DC-DC converter block diagram

9.4 Front-End

This chassis uses different tuners depending on the region and execution. An overview of the different executions can be found in table “Tuner diversity”.

Table 9-1 Tuner diversity

Region	Tuner	Type
Europe	TD1316AF	hybrid
	UV1318S	analogue
AP	UV1316E	analogue
China	TEDE9	analogue
Latam	UV1338	analogue

For a general outline of tuner applications in this chassis see figure “Tuner IF diagram”.

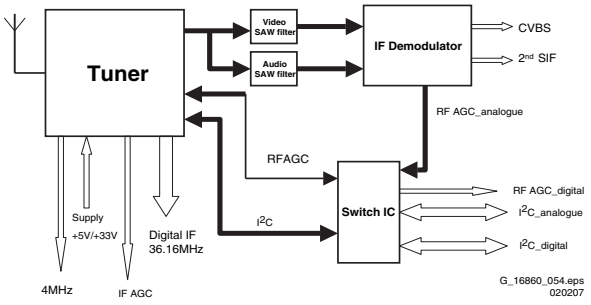


Figure 9-5 Tuner IF diagram

In the LC7.1x chassis (analogue sets), the signal coming from the tuner is fed to the IF demodulator (through the SAW filters) and then passed to the Trident Video Processor.

9.4.1 Video IF Amplifier

The IF-filter is integrated in a SAW (Surface Acoustic Wave) filter. In LATAM region, one filter (item 1161) is used for filtering both IF-video and IF-audio. In other regions, the type of these filters depends on the standard(s) received (region-dependency). Some filters can be switched to another standard, what makes them suitable for applications in multi-standard platforms. An overview of the SAW filter diversity can be found in table “SAW filter diversity”.

Table 9-2 SAW filter diversity

SAW filter	Switching Y/N	Region	Video/Audio
OFWK3953M	No	Europe	Video
OFWK9656M	Yes	Europe	Audio
OFWK7265L	Yes	AP	Video
OFWK9361L	No	AP	Sound
OFWK3956L	No	China	Video
OFWK3955L	No	China	Video
OFWK9352L	No	China	Audio
OFWM1967L	No	LATAM	Video/Audio

Switching is done by the microcontroller via SAW_SW. In table “SAW filter switching” is explained how to address the different system standards.

Table 9-3 SAW filter switching

Region	SAW_SW	System
Europe	1	L’
	0	other systems
AP	1	B/G, D/K, I
	0	M/N
China	1	B/G, D/K, I
	0	M/N
LATAM	n.a.	M/N

The hybrid tuner TDA1316AF, used in Europe sets, needs to be switched between digital and analogue mode. This is done by the microcontroller via DVB_SW. Refer to table “Hybrid tuner digital/analogue switching” for details.

Table 9-4 Hybrid tuner digital/analogue switching

Region	DVB_SW	Mode
Europe	1	analogue reception
	0	digital reception

The pin assignment of all analogue tuners is equal and can be found in table “Pin assignment analogue tuners”.

Table 9-5 Pin assignment analogue tuners

Pin number	Description	DC voltage (V)
1	RF AGC voltage	3.3 - 4.5 (weak or no signal) < 3.3 (strong signal)
2	n.c.	
3	I^2C-bus address select	0
4	SCL	0 to 3.3
5	SDA	0 to 3.3
6	n.c.	
7	supply voltage	5 ±0.25
8	n.c.	
9	tuning supply voltage	33
10	n.c.	
11	TV IF output	

The pin assignment of the hybrid tuner can be found in table “Pin assignment hybrid tuner”.

Table 9-6 Pin assignment hybrid tuner

Pin number	Description	DC voltage (V)
1	n.c.	
2	RF AGC voltage	3.3 - 4.5 (weak or no signal) < 3.3 (strong signal)
3	I^2C-bus address select	0
4	SCL	0 to 3.3
5	SDA	0 to 3.3
6	4 MHz reference output	
7	supply voltage	5 ±0.25
8	broadband IF output	
9	IF AGC voltage	0 to 3
10	narrowband IF output	
11	narrowband IF output	

9.4.2 Automatic Gain Control

In the LC7.2x chassis (digital sets), the automatic gain control depends on if the set is receiving a digital or an analogue signal. During analogue reception, the hybrid tuner receives an external AGC voltage, coming from the demodulator, to perform automatic gain control. During digital reception, no external AGC voltage is used but the tuners internal AGC loop is used.

In the LC7.1x chassis (analogue sets), the tuner receives an external AGC voltage, coming from the demodulator, to perform automatic gain control.

9.5 Video Processing

The video processing is completely handled by the Trident SVP CX32 video processor which features:

- CVBS-input for analogue signals
- RGB-input for digital (DVB-T) signals
- Motion and “edge-adaptive” deinterlacing
- Integrated ADC
- Built-in 8-bit LVDS transmitter
- Color stretch
- Skin color enhancement
- 3D Digital Comb Video Decoder
- Interlaced and Progressive Scan refresh
- Teletext decoding
- OSD and VBI/Closed Caption.

9.5.1 Video Application

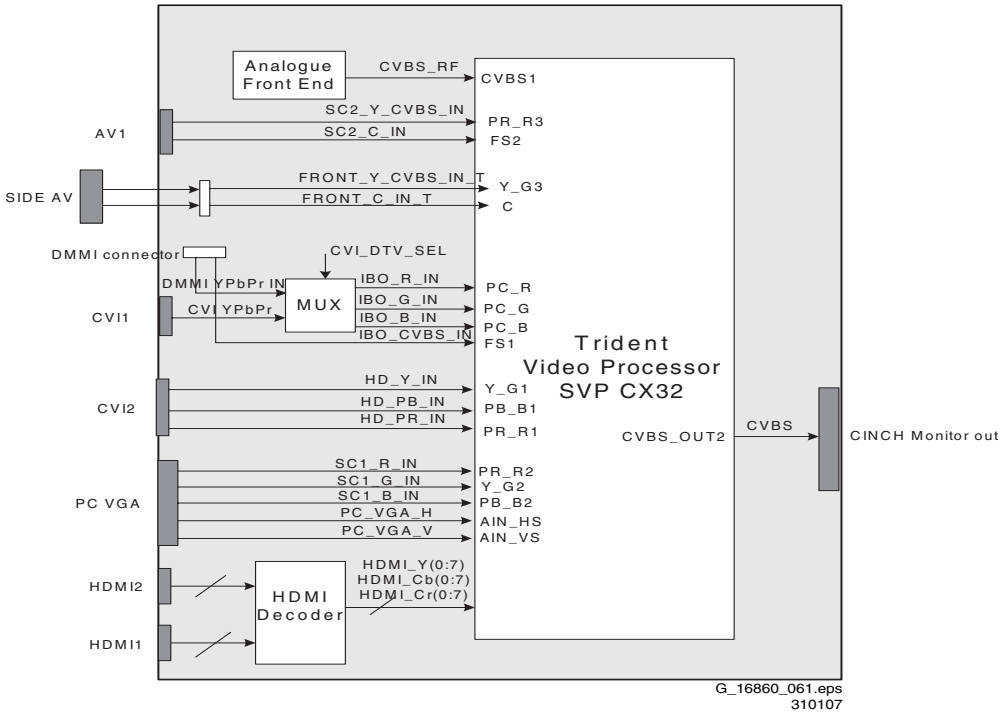


Figure 9-6 Block diagram video processing

"Block diagram video processing" shows the input and output signals to and from the Trident Video Processor in AP/LATAM applications.

During analogue reception, a CVBS signal coming from the analogue front-end is fed to the video processor via pin CVBS1. No digital reception (DVB-T) reception is foreseen in AP/LATAM region. However, an internal DMMI connector is implemented for future digital reception applications in combination with IBO. CVI_DTV_SEL is a control signal from the microprocessor. When this signal is LOW, then the MUX passes the CVI1 YPbPr input signal to the Trident Video Processor. When this signal is HIGH, then the YPbPr input signal coming from the DMMI connector is passed to the video processor. Currently, this signal is always LOW since no IBO is used.

The video processor also interfaces the AV1 and Side AV input, CVI2 (HD), VGA(PC), HDMI1 & 2. A cinch output connector for Monitor output is foreseen.

9.6 Memory addressing

Figure "Memory block diagram" shows the interconnection between the microprocessor, the FLASH memory, the Trident Video Processor and the SDRAM.

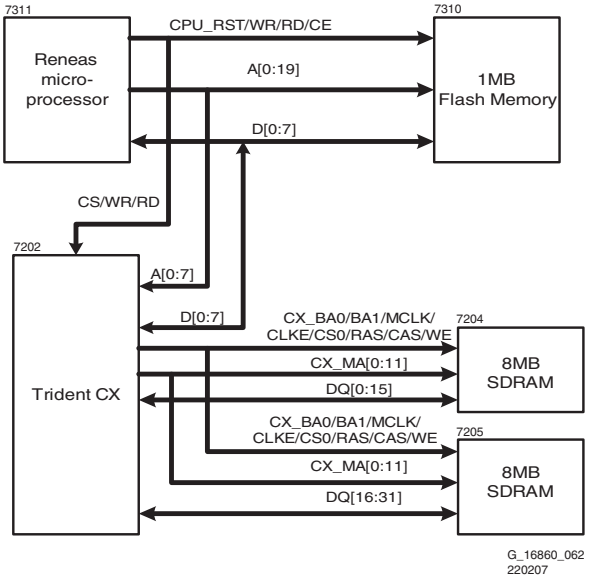


Figure 9-7 Memory block diagram

Control signals CPU_RST, WR, RD and CE, address lines A[0:19] and data lines D[0:7] are used for transferring data between the microprocessor (item 7311) and the flash memory (item 7310). Control signals CS, WR and RD, address lines A[0:7] and data lines D[0:7] are used for transferring data between the Trident Video Processor (item 7202) and the microprocessor (item 7311). Control signals CX_BA0, CX_BA1, CX_MCLK, CX_CLKE, CX_CS0, CX_RAS, CX_CAS and CX_WE, address lines CX_MA[0:11] and data lines DQ[0:15] are used for transferring data between the Trident Video Processor and the SDRAM ICs (items 7204 and 7205).

9.7 1080p Panel (if present)

In the LC7.x chassis with 1080p full-HD LCD panel (e.g. the 42PFL7662D), an extra module called “1080p panel” is needed, because the main video processor supports only “single LVDS”, while the full HD LCD panel requires “dual LVDS”.
On this panel, a “Genesis” scaler IC performs the processing. The input is a “single LVDS” signal from the Trident video processor, while the output is a “dual LVDS” signal for the HD display.
Communication is done via I2C, and controlled by the Reneas microprocessor on the SSB.

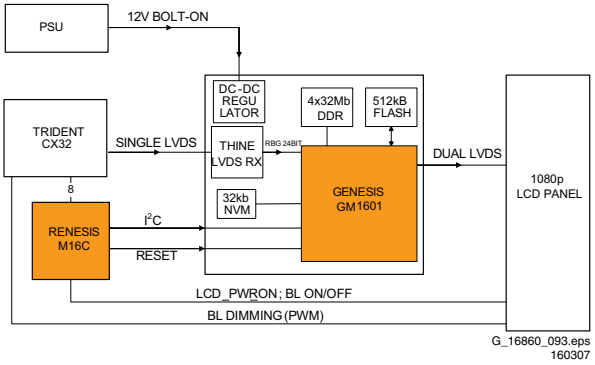


Figure 9-8 1080p block diagram

Some features of the board are:
- Single LBVDS input, dual LVDS output.
- LVDS output enable/disable.
- Hue, saturation, and flesh tone adjustment (= skin tone).
- Brightness and contrast adjustment.
- Motion adaptive de-interlacer (in 1080i).
- Supported SD formats:
  – HDMI and YPbPr: 480i&p, 576i&p (50 and 60 Hz).
- Supported HD 720p formats:
  – HDMI and YPbPr: 720p (50 and 60 Hz).
- Supported HD 1080i formats:
  – HDMI: 1080i (50 and 60 Hz).
  – YPbPr: 1080i (50, 59.94, and 60 Hz).
- Supported HD 1080p formats:
  – HDMI and YPbPr: 1080p (25 and 30 Hz).
- Upgradable software (via UART). Please refer to chapter 5 and/or ComPair.

9.8 Audio Processing

The audio decoding is done entirely via the Multistandard Sound Processor (MSP) 4450P (item 7411).
This processor covers the processing of both analogue and (NICAM) digital input signals by processing the (analogue) IF signal-in to processed (analogue) AF-out (baseband audio). An internal 40 ms (stereo) audio delay line (LIP SYNC) is foreseen and therefore no external delay line is necessary.

All internal clock signals are derived from an external 18.432 MHz oscillator, which, in NICAM or I²S-mode, on its turn is locked to the corresponding source.

The following functionality is included:
- Automatic Standard Detection (ASD) automatically detects the actual broadcasted TV standard
- Automatic Sound Select (ASS) automatically switches (without any I²C-bus action) between mono/stereo/ bilingual mode when the broadcast mode changes.

9.8.1 Audio Application

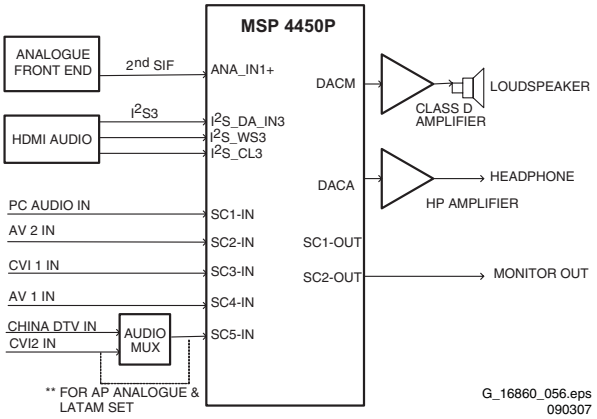


Figure 9-9 Block diagram audio processing

In AP/LATAM applications, the MSP features:
- Sound IF input for signals coming from the analogue front-end
- Three I²S-inputs for signals (“DATA”, “CLK” and “WS”) coming from the HDMI interface
- Five analogue inputs: for CVI1, CVI2, AV1, AV2, DTV (China) and PC audio
- Loudspeaker output path
- Headphone output path
- Monitor output path (WYSIWYG).

Digital audio signals coming from HDMI sources are directly fed to the MSP via the I2S_DA_IN3, I2S_WS3 and I2S_CL3 lines. This ensures a “true digital path”.
In case of reception of digital TV signals, a multiplexer is used to switch between China DTV or DVI2 audio. In China sets, the audio signal coming from the DTV module is in analogue format. The output from the multiplexer is fed to the MSP via the SC5-input.

The microprocessor (item 7311) controls the audio part with the following control lines:
- MUTEn: used to mute the Class D amplifiers
- ANTI_PLOP: used to detect any DC failure in the Class D amplifiers
- DC_PROT: used to detect any DC failure in the Class D amplifiers.

9.8.2 Audio Amplifier

The audio amplifier is an integrated class-D amplifier (TDA8932T, item 7A01). It combines a good performance with a high efficiency, resulting in a big reduction in heat generation.

Principle

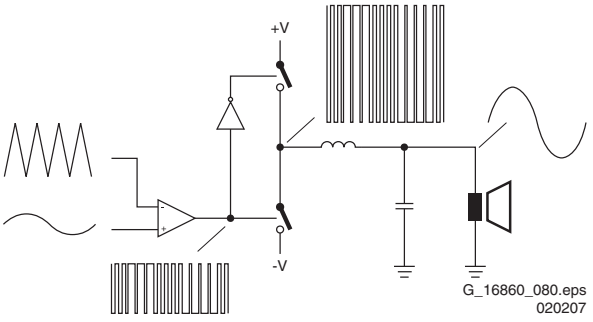


Figure 9-10 Principle Class-D Amplifier

The Class D amplifier works by varying the duty cycle of a Pulse Width Modulated (PWM) signal.

By comparing the input voltage to a triangle wave, the amplifier increases duty cycle to increase output voltage, and decreases duty cycle to decrease output voltage.
The output transistors of a Class D amplifier switch from 'full off' to 'full on' (saturated) and then back again, spending very little time in the linear region in between. Therefore, very little power is lost to heat. If the transistors have a low “on” resistance (RDS(ON)), little voltage is dropped across them, further reducing losses.
A Low Pass Filter at the output passes only the average of the output wave, which is an amplified version of the input signal. In order to keep the distortion low, negative feedback is applied.

The **advantage** of Class D is increased efficiency (= less heat dissipation). Class D amplifiers can drive the same output power as a Class AB amplifier using less supply current.
The **disadvantag**e is the large output filter. The main reason for this filter is that the switching waveform results in maximum current flow. This causes more loss in the load, which causes lower efficiency. An LC filter with a cut-off frequency less than the Class D switching frequency, allows the switching current to flow through the filter instead of the load, thus reducing the overall loss and increasing the efficiency.

DC-protection
A DC-detection circuit is foreseen to protect the speakers. It is built around three transistors (items 7A05 to 7A07) and generates a protection signal (DC_PROT) to the microprocessor in case of a DC failure in the Class D amplifiers.

9.9 HDMI

9.9.1 Introduction

Note: Text below is an excerpt from the “HDMI Specification” that is issued by the HDMI founders (see *http://www.hdmi.org*).

The High-Definition Multimedia Interface is developed for transmitting digital signals from DVD players, set-top boxes and other audiovisual sources to television sets, projectors and other video displays.
HDMI can carry high quality multi-channel audio data and can carry all standard and high-definition consumer electronics video formats. Content protection technology is available. HDMI can also carry control and status information in both directions.

HDMI is backward compatible with DVI (1.0). Compared with DVI, HDMI offers extra:
- YUV 4:4:4 (3 × 8-bit) or 4:2:2 (up to 2 × 12-bit), where DVI offers only RGB 4:4:4 (3 × 8 bit).
- Digital audio in CD quality (16-bit, 32/44.1/48 kHz), higher quality available (8 channels, 192 kHz).
- Remote control via CEC bus (Consumer Electronics Control): allows user to control all HDMI devices with the TV's remote control and menus.
- Smaller connector (SCART successor).
- Less cables: e.g. from 10 audio/9 video cables to 3 HDMI cables.

9.9.2 Implementation

The IC used is the Sil 9025 (Silicon Image) third generation HDMI receiver, item 7817 on the SSB.

It has the following features:
- Dual HDMI input connector
- Two EEPROMS to support EDID
- HDMI audio
- I^2S output to low-cost DACs which operate at a frequency of 32 to 192 kHz
- Integrated HDCP decryption engine
- Built-in pre-programmed HDCP keys for highest level of copy-protection security
- Color space conversion RGB to YCbCr
- “Hot Plug Reset” signal.

Figure “HDMI implementation” shows the HDMI configuration in this chassis.

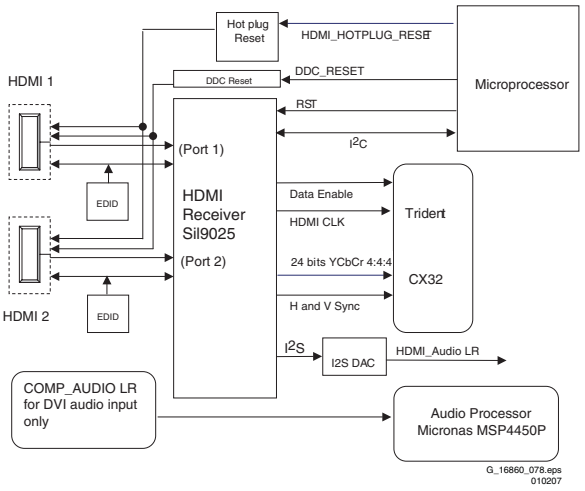


Figure 9-11 HDMI implementation

HDMI connectors 1 and 2 are connected to resp. ports 1 and 2 of the HDMI receiver. The ports cannot be activated at the same moment. Switching is controlled by software.
“Hot Plug Reset” and “DDC Reset” are controlled by the microprocessor.

The HDMI receiver will convert all RGB or YCbCr 4:2:2 signals to 24-bit YCbCr 4:4:4. When it receives a YCbCr 4:4:4 signal it will just pass the signal directly to the Trident Video Processor.

9.10 Abbreviation List

1080i	1080 visible lines, interlaced
1080p	1080 visible lines, progressive scan
2CS	2 Carrier Sound
2DNR	Spatial (2D) Noise Reduction
3DNR	Temporal (3D) Noise Reduction
480i	480 visible lines, interlaced
480p	480 visible lines, progressive scan
AARA	Automatic Aspect Ratio Adaptation: algorithm that adapts aspect ratio to remove horizontal black bars; keeping up the original aspect ratio
ACI	Automatic Channel Installation: algorithm that installs TV channels directly from a cable network by means of a predefined TXT page
ADC	analogue to Digital Converter
AFC	Automatic Frequency Control: control signal used to tune to the correct frequency
AGC	Automatic Gain Control: algorithm that controls the video input of the feature box
AM	Amplitude Modulation
AUO	Acer Unipack Optronics
AP	Asia Pacific
AR	Aspect Ratio: 4 by 3 or 16 by 9
ASD	Automatic Standard Detection
AV	Audio Video
B/G	Monochrome TV system. Sound carrier distance is 5.5 MHz
BTSC	Broadcast Television System Committee
CAM	Conditional Access Module
CBA	Circuit Board Assembly (or PWB)
CEC	Consumer Electronics Control bus; remote control bus on HDMI connections
CI	Common Interface; E.g PCMCIA slot for a CAM in a set top box
CL	Constant Level: audio output to connect with an external amplifier
CLUT	Color Look Up Table
ComPair	Computer aided rePair
COFDM	Coded Orthogonal Frequency Division Multiplexing; A multiplexing technique that distributes the data to be transmitted over many carriers
CSM	Customer Service Mode
CVBS	Composite Video Blanking and Synchronization
CVBS-MON	CVBS monitor signal
CVBS-TER-OUT	CVBS terrestrial out
CVI	Component Video Input
DAC	Digital to analogue Converter
DBE	Dynamic Bass Enhancement: extra low frequency amplification
DDC	Display Data Channel; is a part of the “Plug and Play” feature
DFU	Directions For Use: owner's manual
DNR	Dynamic Noise Reduction
DRAM	Dynamic RAM
DSP	Digital Signal Processing
DST	Dealer Service Tool: special (European) remote control designed for service technicians
DTS	Digital Theatre Sound
DVB(T)	Digital Video Broadcast; An MPEG2 based standard for transmitting digital audio and video. T= Terrestrial
DVD	Digital Versatile Disc
DVI	Digital Visual Interface
DW	Double Window
ED	Enhanced Definition: 480p, 576p
EDID	Extended Display Identification Data (VESA standard)
EEPROM	Electrically Erasable and Programmable Read Only Memory
EU	EUrope
EXT	EXTernal (source), entering the set by SCART or by cinches (jacks)
FBL	Fast Blanking: DC signal accompanying RGB signals
FBL-TXT	Fast Blanking Teletext
FLASH	FLASH memory
FM	Field Memory / Frequency Modulation
FMR	FM Radio
FRC	Frame Rate Converter
FTV	Flat TeleVision
H	H_sync to the module
HD	High Definition: 720p, 1080i, 1080p
HDCP	High-bandwidth Digital Content Protection; A “key” encoded into the HDMI/DVI signal that prevents video data piracy. If a source is HDCP coded and connected via HDMI/DVI without the proper HDCP decoding, the picture is put into a “snow vision” mode or changed to a low resolution. For normal content distribution, the source and the display device must be enabled for HDCP “software key” decoding
HDMI	High Definition Multimedia Interface, digital audio and video interface
HP	Head Phone
I	Monochrome TV system. Sound carrier distance is 6.0 MHz
I2C	Integrated IC bus
I2S	Integrated IC Sound bus
IBO(Z)	Intelligent Bolt On module. Z= Zapper; module for DVB reception.
IC	Integrated Circuit
IF	Intermediate Frequency
IR	Infra Red
IRQ	Interrupt ReQuest
Last Status	The settings last chosen by the customer and read and stored in RAM or in the NVM. They are called at start-up of the set to configure it according the customers wishes
LATAM	LATin AMerica
LC07	Philips chassis name for LCD TV 2007 project
LCD	Liquid Crystal Display
LED	Light Emitting Diode
L/L'	Monochrome TV system. Sound carrier distance is 6.5 MHz. L' is Band I, L is all bands except for Band I
LPL	LG Philips LCD
LS	Loud Speaker
LVDS	Low Voltage Differential Signalling, data transmission system for high speed and low EMI communication.
M/N	Monochrome TV system. Sound carrier distance is 4.5 MHz
MOSFET	Metal Oxide Semiconductor Field Effect Transistor
MPEG	Motion Pictures Experts Group
MSP	Multi-standard Sound Processor: ITT sound decoder
MUTE	MUTE Line
NAFTA	North American Free Trade Association: Trade agreement between Canada, USA and Mexico
NC	Not Connected

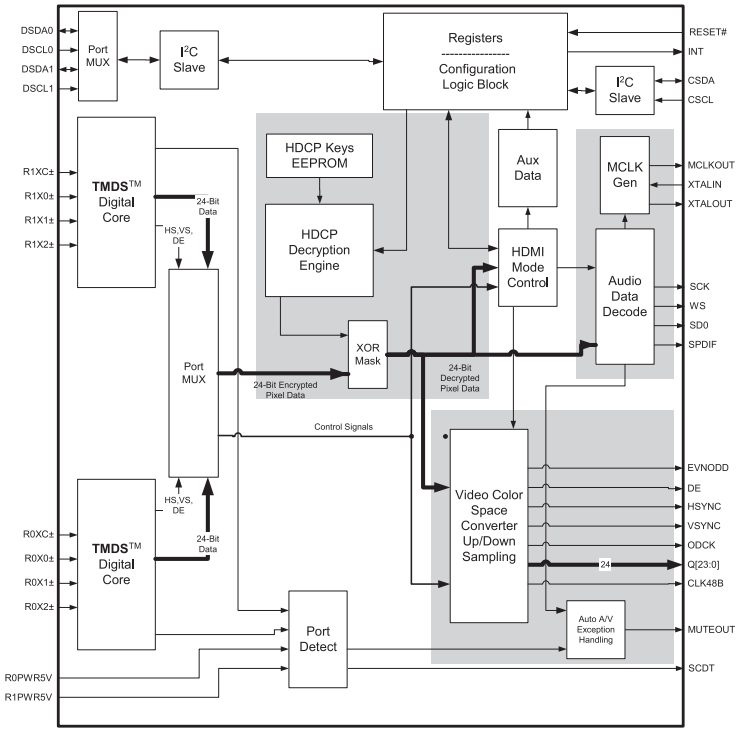
NICAM	Near Instantaneous Compounded Audio Multiplexing. This is a digital sound system, used mainly in Europe.
NTSC	National Television Standard Committee. Color system used mainly in North America and Japan. Color carrier NTSC M/N = 3.579545 MHz, NTSC 4.43 = 4.433619 MHz (this is a VCR norm, it is not transmitted off-air)
NVM	Non Volatile Memory: IC containing TV related data (for example, options)
O/C	Open Circuit
ON/OFF LED	On/Off control signal for the LED
OAD	Over the Air Download
OSD	On Screen Display
PAL	Phase Alternating Line. Color system used mainly in Western Europe (color carrier = 4.433619 MHz) and South America (color carrier PAL M = 3.575612 MHz and PAL N = 3.582056 MHz)
PC	Personal Computer
PCB	Printed Circuit Board (or PWB)
PDP	Plasma Display Panel
PIG	Picture In Graphic
PIP	Picture In Picture
PLL	Phase Locked Loop. Used, for example, in FST tuning systems. The customer can directly provide the desired frequency
PSU	Power Supply Unit
PWB	Printed Wiring Board (or PCB)
RAM	Random Access Memory
RC	Remote Control transmitter
RC5 (6)	Remote Control system 5 (6), the signal from the remote control receiver
RF	Radio Frequency
RGB	Red, Green, and Blue. The primary color signals for TV. By mixing levels of R, G, and B, all colors (Y/C) are reproduced.
RGBHV	Red, Green, Blue, Horizontal sync, and Vertical sync
ROM	Read Only Memory
SAM	Service Alignment Mode
SAP	Secondary Audio Program
SC	SandCastle: two-level pulse derived from sync signals
SC1-OUT	SCART output of the MSP audio IC
SC2-OUT	SCART output of the MSP audio IC
S/C	Short Circuit
SCL	Clock signal on I2C bus
SD	Standard Definition: 480i, 576i
SDA	Data signal on I2C bus
SDI	Samsung Display Industry
SDM	Service Default Mode
SDRAM	Synchronous DRAM
SECAM	SEequence Couleur Avec Memoire. Color system used mainly in France and Eastern Europe. Color carriers = 4.406250 MHz and 4.250000 MHz
SIF	Sound Intermediate Frequency
SMPS	Switch Mode Power Supply
SND	SouND
SOPS	Self Oscillating Power Supply
S/PDIF	Sony Philips Digital InterFace
SRAM	Static RAM
SSB	Small Signal Board
STBY	Stand-by
SVHS	Super Video Home System
SW	Sub Woofer / SoftWare
THD	Total Harmonic Distortion
TXT	TeleteXT
uP	Microprocessor
VL	Variable Level out: processed audio output toward external amplifier
VCR	Video Cassette Recorder
VGA	Video Graphics Array
WD	Watch Dog
WYSIWYR	What You See Is What You Record: record selection that follows main picture and sound
XTAL	Quartz crystal
YPbPr	Component video (Y= Luminance, Pb/Pr= Color difference signals B-Y and R-Y, other amplitudes w.r.t. to YUV)
Y/C	Video related signals: Y consists of luminance signal, blanking level and sync; C consists of color signal.
Y-OUT	Luminance-signal
YUV	Baseband component video (Y= Luminance, U/V= Color difference signals)

9.11 IC Data Sheets

This section shows the internal block diagrams and pin layouts of ICs that are drawn as “black boxes” in the electrical diagrams (with the exception of “memory” and “logic” ICs).

9.11.1 Diagram B06C, Type SIL9025CTU(IC7817) (HDMI)

Block Diagram



Pin Configuration

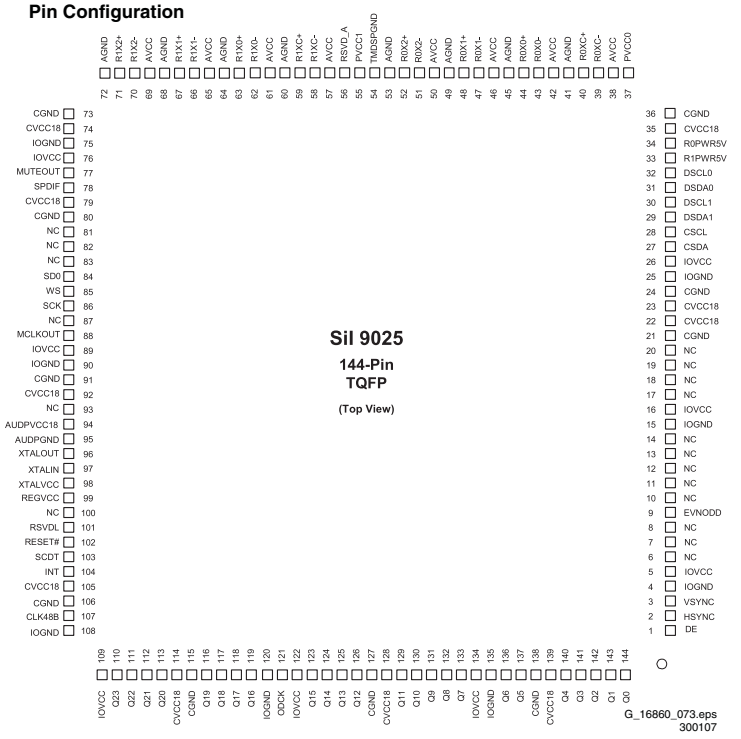
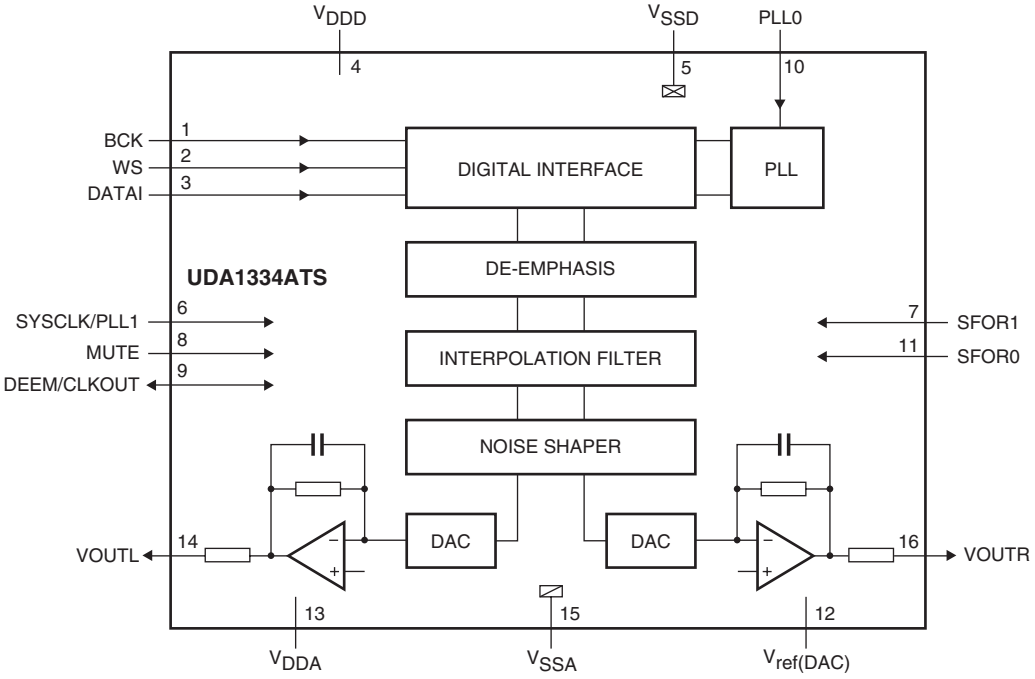


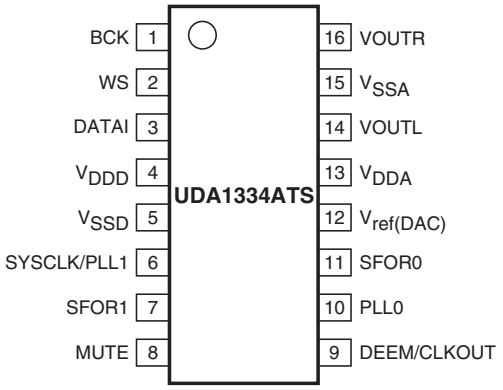
Figure 9-12 Internal block diagram and pin configuration

9.11.2 Diagram B06C, Type UDA1334ATS (IC7810) (audio DAC)

Block Diagram



Pin Configuration

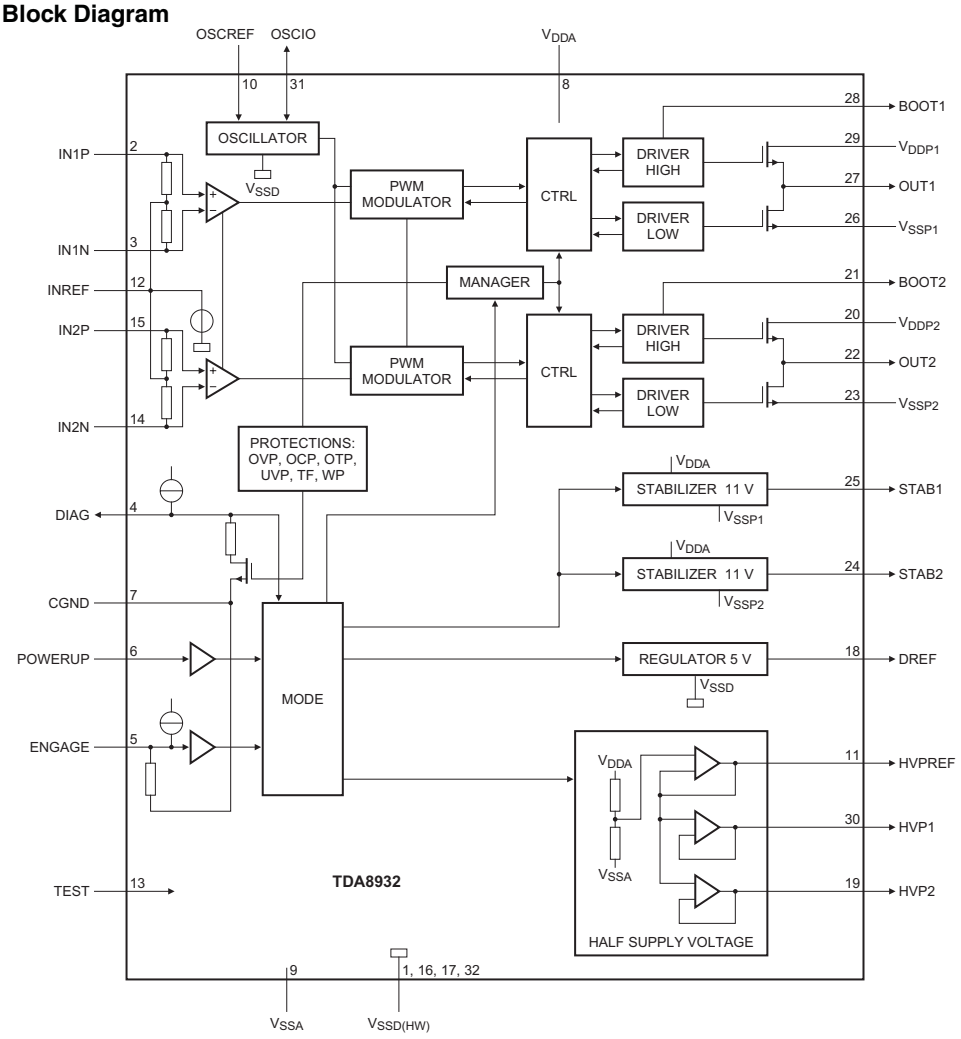


G_16860_081.eps
220207

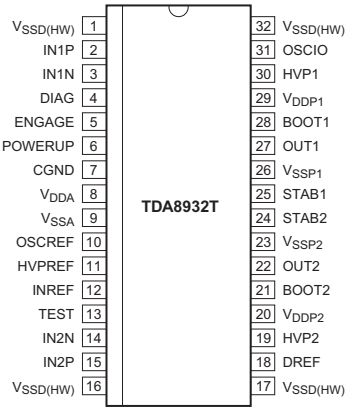
Figure 9-13 Internal block diagram and pin configuration

9.11.3 Diagram B07, Type TDA8932T (IC7A01) (audio amplifier)

Block Diagram



Pin Configuration

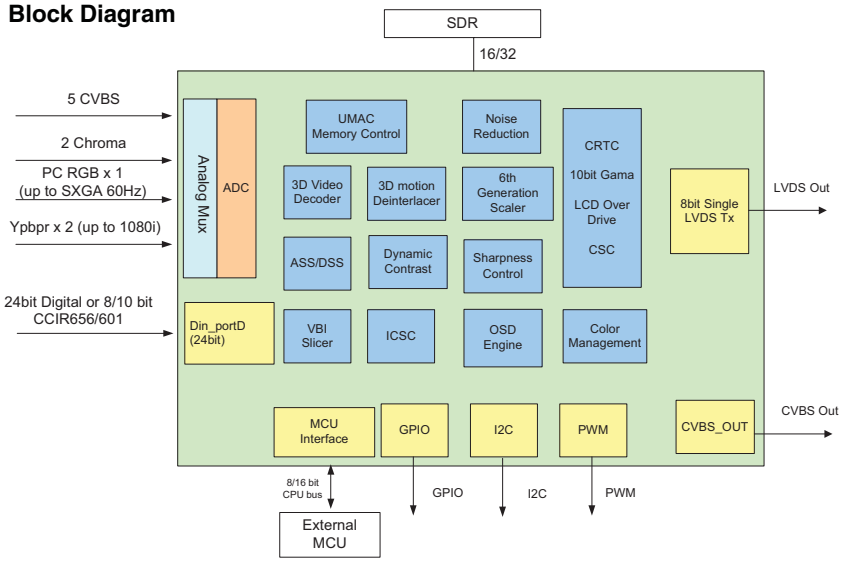


G_16860_045.eps
300107

Figure 9-14 Internal block diagram and pin configuration

9.11.4 Diagram B04B, Type SVP CX32 (IC7202) (Trident video processor)

Block Diagram



Pin Configuration

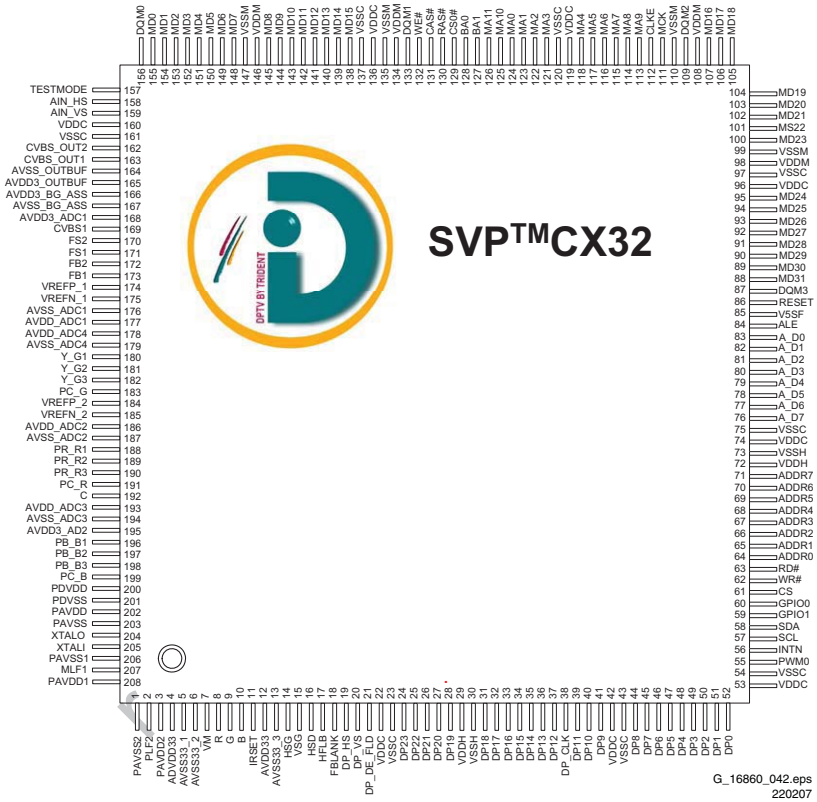


Figure 9-15 Internal block diagram and pin configuration

9.11.5 Diagram B04C, Type MSP4450P (IC7411) (Micronas sound processor)

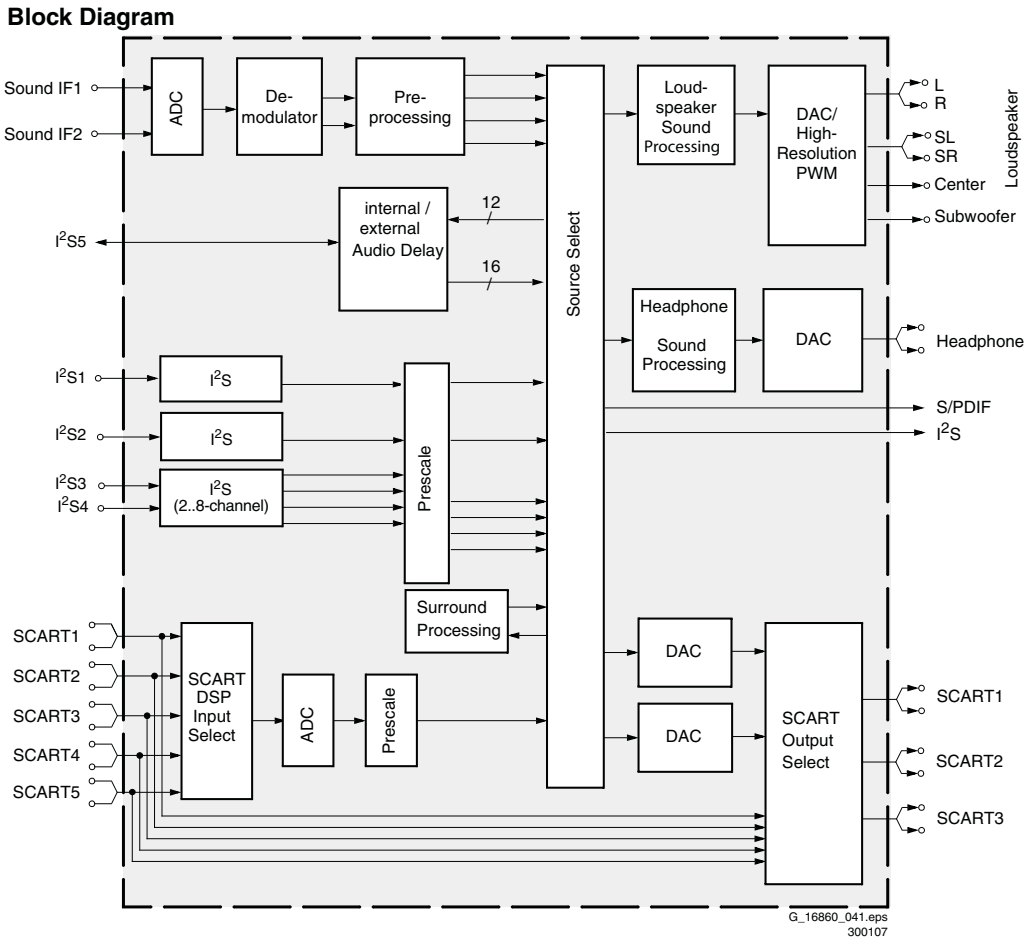


Figure 9-16 Internal block diagram

10. Spare Parts List

Sets Listed per Model Number

26PFL5322/45

0815	Proc. Main SW	Download from website
0816	Proc. NVM SW	Download from website
0821	HDMI-1 SW	Download from website
0822	HDMI-2 SW	Download from website
1004	9322 249 78682	LCD T260XW03V1
1005	3139 128 78452	Power Supply Unit
1012	3139 268 04441	IR/LED assy [J]
1014	3139 268 04461	Keyboard assy [E]
1016	3139 268 08711	Side I/O assy [D]
8002	3104 311 06951	Cable 2p3/180/2p
8304	3139 131 09451	Cable 11p/340/11p
8521	3139 131 09511	Cable 14p/220/14p
8735	3139 131 08511	Cable 04p/400 820/2ft
8C01	3139 131 08551	Cable 9p/180/9p Bk
8G51	3139 131 08282	LVDS 30p/180/30p
8M01	3104 311 12371	Cable 3p/80/3p Wh
8M20	3104 311 03601	Cable 7p/400/7p
8P11	3139 131 08581	Cable 8p/220/8p Bk

5213	2422 264 00605	Loudsp. 6Ω 15W FR

26PFL5322/78

0815	Proc. Main SW	Download from website
0816	Proc. NVM SW	Download from website
0821	HDMI-1 SW	Download from website
0822	HDMI-2 SW	Download from website
1004	9322 234 13682	LC260WX2-SLB2
1005	3139 128 78452	Power Supply Unit
1012	3139 268 50821	IR/LED assy [J]
1014	3139 268 50801	Keyboard assy [E]
1016	3139 268 09561	Side I/O assy [D]
8002	3104 311 06951	Cable 2p3/180/2p
8304	3139 131 09451	Cable 11p/340/11p
8520	3104 311 10701	Cable 12p/680/12p
8521	3139 131 09521	Cable 14p/280/14p
8735	3139 131 08511	Cable 04p/400 820/2ft
8C01	3139 131 08551	Cable 9p/180/9p Bk
8G51	3139 131 08282	LVDS 30p/180/30p
8M20	3139 131 09391	Cable 7p/340+480/3+6p
8P11	3139 131 08581	Cable 8p/220/8p Bk

5213	2422 264 00616	Loudsp. 6W 15W FR

32PFL5332/45

0815	Proc. Main SW	Download from website
0816	Proc. NVM SW	Download from website
0821	HDMI-1 SW	Download from website
0822	HDMI-2 SW	Download from website
1004	9322 230 03682	LC320W01-SL06
1005	3139 128 78452	Power Supply Unit
1012	3139 268 04441	IR/LED assy [J]
1014	3139 268 04461	Keyboard assy [E]
1016	3139 268 08711	Side I/O assy [D]
8002	3104 311 07121	Cable 2p3/220/Inlet
8304	3139 131 09411	Cable 11p/480/11p
8520	3104 311 10701	Cable 12p/680/12p
8521	3104 311 12441	Cable 14p/220/14p
8735	3139 131 08671	Cable 4p/480 1000/2ft
8C01	3139 131 08541	Cable 9p/220/9p Bk
8G51	3139 131 08282	LVDS 30p/180/30p
8M01	3104 311 12371	Cable 3p/80/3p Wh
8M20	3104 311 04341	Cable 7p/560/7p Wh
8P11	3139 131 08581	Cable 8p/220/8p Bk

5213	2422 264 00605	Loudsp. 6Ω 15W FR
5215	2422 264 00607	Loudsp. 6Ω 15W Tw

32PFL5332/77

0815	Proc. Main SW	Download from website
0816	Proc. NVM SW	Download from website
0821	HDMI-1 SW	Download from website
0822	HDMI-2 SW	Download from website
1004	9322 230 03682	LC320W01-SL06
1014	3139 268 04461	Keyboard assy [E]
1016	3139 268 08711	Side I/O assy [D]
8002	3104 311 07121	Cable 2p3/220/Inlet
8304	3139 131 09411	Cable 11p/480/11p
8520	3104 311 10701	Cable 12p/680/12p
8521	3104 311 12441	Cable 14p/220/14p
8735	3139 131 08671	Cable 4p/480 1000/2ft
8C01	3139 131 08541	Cable 9p/220/9p Bk
8G51	3139 131 08282	LVDS 30p/180/30p
8M01	3104 311 12371	Cable 3p/80/3p Wh
8M20	3104 311 04341	Cable 7p/560/7p Wh
8P11	3139 131 08581	Cable 8p/220/8p Bk

5213	2422 264 00605	Loudsp. 6Ω 15W FR
5215	2422 264 00607	Loudsp. 6Ω 15W Tw

32PFL5332/78

0815	Proc. Main SW	Download from website
0816	Proc. NVM SW	Download from website
0821	HDMI-1 SW	Download from website
0822	HDMI-2 SW	Download from website
1004	9322 230 03682	LC320W01-SL06
1005	3139 128 78452	Power Supply Unit
1012	3139 268 04441	IR/LED assy [J]
1014	3139 268 04461	Keyboard assy [E]
1016	3139 268 08711	Side I/O assy [D]
8002	3104 311 07121	Cable 2p3/220/Inlet
8304	3139 131 09411	Cable 11p/480/11p
8520	3104 311 10701	Cable 12p/680/12p
8521	3104 311 12441	Cable 14p/220/14p
8735	3139 131 08671	Cable 4p/480 1000/2ft
8C01	3139 131 08541	Cable 9p/220/9p Bk
8G51	3139 131 08282	LVDS 30p/180/30p
8M01	3104 311 12371	Cable 3p/80/3p Wh
8M20	3104 311 04341	Cable 7p/560/7p Wh
8P11	3139 131 08581	Cable 8p/220/8p Bk

5213	2422 264 00605	Loudsp. 6Ω 15W FR
5215	2422 264 00607	Loudsp. 6Ω 15W Tw

32PFL7342/78

0815	Proc. Main SW	Download from website
0816	Proc. NVM SW	Download from website
0821	HDMI-1 SW	Download from website
0822	HDMI-2 SW	Download from website
1004	9322 230 03682	LC320W01-SL06
1005	3139 128 78452	Power Supply Unit
1012	3139 268 04441	IR/LED assy [J]
1014	3139 268 04461	Keyboard assy [E]
1016	3139 268 08711	Side I/O assy [D]
1063	3139 268 07201	AmbiLight Inv. assy [AI]
1175	3139 268 07142	AmbiLight Module 4 LED
8002	3104 311 07121	Cable 2p3/220/Inlet
8304	3104 311 08161	Cable 11p/480/11p
8401	3139 131 08781	Cable 09p/400+400/04p
8402	3139 131 08431	Cable 08p/680+560/04+04p
8404	3104 311 12541	Cable 5p/560/5p
8405	3139 131 09491	LVDS Cable 30p/280/30p
8406	3139 131 09481	LVDS Cable 30p/280/30p
8520	3104 311 10701	Cable 12p/680/12p
8521	3104 311 12441	Cable 14p/220/14p
8735	3139 131 08671	Cable 4p/480 1000/2ft
8C01	3139 131 08541	Cable 9p/220/9p Bk
8M01	3104 311 12371	Cable 3p/80/3p Wh
8M20	3104 311 04341	Cable 7p/560/7p Wh
8M82	3139 131 08351	Cable 4p7/1000/4p7
8P11	3139 131 08581	Cable 8p/220/8p Bk

5213	2422 264 00605	Loudsp. 6Ω 15W FR
5215	2422 264 00607	Loudsp. 6Ω 15W Tw

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0815	Proc. Main SW	Download from website
0816	Proc. NVM SW	Download from website
0821	HDMI-1 SW	Download from website
0822	HDMI-2 SW	Download from website
1004	9322 246 96682	LC370WX1-SLB1
1005	3122 427 24573	Power Supply Unit
1012	3139 268 04441	IR/LED assy [J]
1014	3139 268 04461	Keyboard assy [E]
1016	3139 268 08711	Side I/O assy [D]
8002	3139 131 08501	Cable 2p3/100/inlet
8304	3139 131 09411	Cable 11p/480/11p
8520	3104 311 08191	Cable 12p/1200/12p
8521	3104 311 12481	Cable 14p/400/14p Wh
8735	3139 131 08041	Cable 4p/560 820/2ft
8C01	3139 131 08531	Cable 9p/340/9p Bk
8G51	3139 131 08282	LVDS 30p/180/30p
8M01	3104 311 12371	Cable 3p/80/3p Wh
8M20	3104 311 13091	Cable 7p/560/7p Wh
8P11	3139 131 08571	Cable 8p/340/8p Bk

5213	3106 109 10001	Loudspeaker 6ohm 15W
5214	3106 109 10011	Loudspeaker 6ohm 15W
5223	3106 109 10001	Loudspeaker 6ohm 15W
5224	3106 109 10011	Loudspeaker 6ohm 15W

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0815	Proc. Main SW	Download from website
0816	Proc. NVM SW	Download from website
0821	HDMI-1 SW	Download from website
0822	HDMI-2 SW	Download from website
1004	9322 249 09682	LCD LC420WX5-SLD1
1005	3122 427 24573	Power Supply Unit
1012	3139 268 04441	IR/LED assy [J]
1014	3139 268 04461	Keyboard assy [E]
1016	3139 268 08711	Side I/O assy [D]
8002	3104 311 08071	Cable 2P3/140
8304	3139 131 09441	Cable 11p/480/11p
8520	3104 311 08191	Cable 12p/1200/12p
8521	3104 311 12481	Cable 14p/400/14p Wh
8735	3139 131 08041	Cable 4p/560 820/2ft
8C01	3139 131 08521	Cable 9p/400/9p Bk
8G51	3139 131 08291	Cable 30p/280/30p Fi-x
8M01	3104 311 12371	Cable 3p/80/3p Wh
8M20	3104 311 13091	Cable 7p/560/7p Wh
8P11	3139 131 08561	Cable 8p/400/8p Bk

5211	2422 264 00618	Loudsp. 6Ω 15W R
5212	2422 264 00617	Loudsp. 6Ω 15W L

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0815	Proc. Main SW	Download from website
0816	Proc. NVM SW	Download from website
0821	HDMI-1 SW	Download from website
0822	HDMI-2 SW	Download from website
1004	9322 249 09682	LCD LC420WX5-SLD1
1005	3122 427 24573	Power Supply Unit
1012	3139 268 04441	IR/LED assy [J]
1014	3139 268 04461	Keyboard assy [E]
1016	3139 268 08711	Side I/O assy [D]
8002	3104 311 08071	Cable 2P3/140
8304	3139 131 09441	Cable 11p/480/11p
8520	3104 311 08191	Cable 12p/1200/12p
8521	3104 311 12481	Cable 14p/400/14p Wh
8735	3139 131 08041	Cable 4p/560 820/2ft
8C01	3139 131 08521	Cable 9p/400/9p Bk
8G51	3139 131 08291	Cable 30p/280/30p Fi-x
8M01	3104 311 12371	Cable 3p/80/3p Wh
8M20	3104 311 13091	Cable 7p/560/7p Wh
8P11	3139 131 08561	Cable 8p/400/8p Bk

5213	3106 109 10001	Loudspeaker 6ohm 15W
5214	3106 109 10011	Loudspeaker 6ohm 15W
5223	3106 109 10001	Loudspeaker 6ohm 15W
5224	3106 109 10011	Loudspeaker 6ohm 15W

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0815	Proc. Main SW	Download from website
0816	Proc. NVM SW	Download from website
0821	HDMI-1 SW	Download from website
0822	HDMI-2 SW	Download from website

1004	9322 249 09682	LCD LC420WX5-SLD1
1005	3122 427 24573	Power Supply Unit
1012	3139 268 04441	IR/LED assy [J]
1014	3139 268 04461	Keyboard assy [E]
1016	3139 268 08711	Side I/O assy [D]
1063	3139 268 50441	Ambilight Interface board
1175	3139 268 07132	AmbiLight Module 6 LED
8002	3104 311 08071	Cable 2P3/140
8304	3104 311 08161	Cable 11p/480/11p
8401	3139 131 08371	Cable 09p/680+680/ 04p+04p
8402	3139 131 08411	Cable 08p/1k0+820/ 04+04p
8404	3104 311 09051	Cable 5p/820/5p Wh
8405	3139 131 09491	LVDS Cable 30p/280/30p
8406	3139 131 09471	Cable 30p/340/30p
8520	3104 311 08191	Cable 12p/1200/12p
8521	3104 311 12481	Cable 14p/400/14p Wh
8735	3139 131 08041	Cable 4p/560 820/2ft
8C01	3139 131 08521	Cable 9p/400/9p Bk
8M01	3104 311 12371	Cable 3p/80/3p Wh
8M20	3104 311 13091	Cable 7p/560/7p Wh
8M82	3139 131 08121	Cable 4p7/1400/4p7
8P11	3139 131 08561	Cable 8p/400/8p Bk

5213	3106 109 10001	Loudspeaker 6ohm 15W
5214	3106 109 10011	Loudspeaker 6ohm 15W
5223	3106 109 10001	Loudspeaker 6ohm 15W
5224	3106 109 10011	Loudspeaker 6ohm 15W

52PFL5432/7x
(not available at time of publishing)

AmbiLight Inverter Panel [AI]

Various

1112	2722 171 08785	Xtal 27MHz 30p
1113	2422 025 18739	Connector 5p m
1114	2422 025 18742	Connector 7p m
1115	2422 025 18744	Connector 9p m
1116	2422 025 18743	Connector 8p m
1310	2422 025 18772	Connector 30p m
1311	2422 025 18772	Connector 30p m
1320	2422 549 45325	Bead 67Ω at 100MHz
1321	2422 549 45325	Bead 67Ω at 100MHz
1322	2422 549 45325	Bead 67Ω at 100MHz
1323	2422 549 45325	Bead 67Ω at 100MHz
1324	2422 549 45325	Bead 67Ω at 100MHz
1325	2422 549 45325	Bead 67Ω at 100MHz
1326	2422 549 45325	Bead 67Ω at 100MHz
1327	2422 549 45325	Bead 67Ω at 100MHz
1328	2422 549 45325	Bead 67Ω at 100MHz
1329	2422 549 45325	Bead 67Ω at 100MHz

2110	3198 035 71040	100nF 10% 16V 0402
2111	3198 035 01020	1nF X7R 50V 0402
2112	2020 012 93803	100µF 20% 16V
2113	2020 021 00215	220µF 20% 25V
2114	2238 786 15649	100nF 10% 16V 0603
2115	3198 035 74730	47nF 5% 16V 0402
2116	3198 035 71040	100nF 10% 16V 0402
2117	3198 035 71040	100nF 10% 16V 0402
2118	3198 035 71040	100nF 10% 16V 0402
2121	2020 552 00134	22µF 20% 6.3V 0805
2122	3198 035 71040	100nF 10% 16V 0402
2123	2020 552 96858	10µF 10% 6V3 0805
2124	3198 035 71040	100nF 10% 16V 0402
2125	3198 035 71040	100nF 10% 16V 0402
2126	2020 552 00027	4.7µF 2% 6.3V 0603
2127	2020 552 96631	15nF 10% 16V 0402
2128	3198 034 01010	100pF 50V 0402
2129	3198 035 03320	3.3nF 5% 50V 0402
2130	3198 035 71030	10nF 16V 0402
2131	2020 552 96858	10µF 10% 6V3 0805
2132	3198 034 01010	100pF 50V 0402
2133	3198 035 21030	10nF 16V 0402
2210	3198 035 21030	10nF 16V 0402
2211	3198 035 21030	10nF 16V 0402
2212	3198 035 21030	10nF 16V 0402
2213	3198 035 21030	10nF 16V 0402
2214	3198 035 21030	10nF 16V 0402
2215	3198 035 21030	10nF 16V 0402
2216	3198 035 21030	10nF 16V 0402
2217	3198 035 21030	10nF 16V 0402
2218	2020 552 96448	1µF 10% 16V 0805
2219	3198 035 21030	10nF 16V 0402
2220	2020 552 00141	4.7µF 10% 6.3V 0805
2221	3198 035 21030	10nF 16V 0402
2222	3198 035 21030	10nF 16V 0402
2223	3198 035 21030	10nF 16V 0402
2224	3198 035 21030	10nF 16V 0402
2225	3198 035 21030	10nF 16V 0402
2226	2020 552 00141	4.7µF 10% 6.3V 0805
2227	3198 035 21030	10nF 16V 0402
2228	3198 035 21030	10nF 16V 0402
2229	3198 035 21030	10nF 16V 0402
2230	3198 035 21030	10nF 16V 0402
2231	3198 035 21030	10nF 16V 0402
2232	3198 035 21030	10nF 16V 0402
2233	2020 552 96448	1µF 10% 16V 0805
2234	3198 035 21030	10nF 16V 0402
2235	3198 035 21030	10nF 16V 0402
2236	3198 035 21030	10nF 16V 0402
2237	3198 035 21030	10nF 16V 0402
2240	2022 020 00751	47µF 20% 4V
2242	3198 035 21030	10nF 16V 0402
2243	3198 035 21030	10nF 16V 0402
2244	3198 035 21030	10nF 16V 0402
2245	3198 035 21030	10nF 16V 0402
2246	3198 034 01010	100pF 50V 0402
2247	3198 034 01010	100pF 50V 0402
2322	2020 552 96455	22nF 10% 16V 0402
2323	2020 552 96455	22nF 10% 16V 0402
2501	2020 021 91887	470µF 20% 16V
2502	2020 021 91887	470µF 20% 16V
2503	2238 867 15829	82pF 5% 50V
2504	2238 786 15649	100nF 10% 16V 0603
2505	2238 246 19863	1µF 10V 0603
2510	2238 916 19849	100nF 5% 25V 0603
2511	2020 021 91887	470µF 20% 16V
2512	2020 021 91887	470µF 20% 16V

3110	3198 021 32720	2.7kΩ 5% 0603
3111	3198 031 01030	10kΩ 5% 0402
3112	3198 031 01010	1Ω 5% 0402
3114	3198 031 01040	100kΩ 5% 0402
3115	3198 031 01090	10Ω 5% 0.01W 0402
3116	3198 031 01020	1kΩ 5% 0402
3117	3198 031 02720	2.7kΩ 5% 0.01W 0402
3118	2322 706 74702	4.7kΩ 5% 0402
3119	3198 031 01020	1kΩ 5% 0402
3120	2322 706 71802	1.8kΩ 5% 0402
3121	3198 031 01020	1kΩ 5% 0402
3122	3198 031 03320	3.3kΩ 5% 0402
3123	3198 031 01010	1Ω 5% 0402
3124	3198 031 01010	1Ω 5% 0402
3125	3198 031 01010	1Ω 5% 0402
3126	3198 031 01010	1Ω 5% 0402
3127	3198 031 04790	47Ω 5% 0402
3128	3198 031 01010	1Ω 5% 0402
3129	3198 031 01010	1Ω 5% 0402
3131	3198 031 01010	1Ω 5% 0402
3132	3198 031 01030	10kΩ 5% 0402
3133	3198 031 01040	100kΩ 5% 0402
3134	3198 031 01040	100kΩ 5% 0402
3135	3198 031 01520	1.2kΩ 5% 0.01W 0402
3136	3198 031 01520	1.2kΩ 5% 0.01W 0402
3210	3198 031 01030	10kΩ 5% 0402
3211	3198 031 01030	10kΩ 5% 0402
3212	3198 031 01030	10kΩ 5% 0402
3320	3198 031 01010	1Ω 5% 0402
3321	3198 031 01010	1Ω 5% 0402
3322	3198 031 01010	1Ω 5% 0402
3323	3198 031 01010	1Ω 5% 0402
3324	3198 031 01010	1Ω 5% 0402
3325	3198 031 01010	1Ω 5% 0402
3326	3198 031 01010	1Ω 5% 0402
3327	3198 031 01010	1Ω 5% 0402
3328	3198 031 01010	1Ω 5% 0402
3329	3198 031 01010	1Ω 5% 0402
3330	3198 031 02290	22Ω 5% 0.1W 0402
3331	3198 031 02290	22Ω 5% 0.1W 0402
3332	3198 031 02290	22Ω 5% 0.1W 0402
3333	3198 031 02290	22Ω 5% 0.1W 0402
3334	3198 031 02290	22Ω 5% 0.1W 0402
3335	3198 031 02290	22Ω 5% 0.1W 0402
3336	3198 031 02290	22Ω 5% 0.1W 0402
3337	3198 031 02290	22Ω 5% 0.1W 0402
3338	3198 031 02290	22Ω 5% 0.1W 0402
3339	3198 031 02290	22Ω 5% 0.1W 0402
3340	3198 031 02290	22Ω 5% 0.1W 0402
3341	3198 031 02290	22Ω 5% 0.1W 0402
3342	3198 031 02290	22Ω 5% 0.1W 0402
3343	3198 031 02290	22Ω 5% 0.1W 0402
3344	3198 031 02290	22Ω 5% 0.1W 0402
3345	3198 031 02290	22Ω 5% 0.1W 0402
3346	3198 031 02290	22Ω 5% 0.1W 0402
3347	3198 031 02290	22Ω 5% 0.1W 0402
3348	3198 031 02290	22Ω 5% 0.1W 0402
3349	3198 031 02290	22Ω 5% 0.1W 0402
3501	2322 702 60108	1Ω 5% 0603
3502	2322 702 60108	1Ω 5% 0603
3503	2322 702 60108	1Ω 5% 0603
3504	2322 702 60108	1Ω 5% 0603
3505	3198 021 34780	4.7Ω 5% 0603
3506	2322 704 62202	2.2kΩ 1% 0603
3507	2322 704 62403	24kΩ 1% 0603
3508	3198 021 31220	1.2kΩ 5% 0.062W 0603
3509	3198 021 36810	680Ω 5% 0.062W 0603
3510	3198 021 36810	680Ω 5% 0.062W 0603
3511	2322 702 60108	1Ω 5% 0603
3512	2322 702 60108	1Ω 5% 0603
3513	2322 702 60108	1Ω 5% 0603
3514	2322 702 60108	1Ω 5% 0603
3516	2322 702 60228	2.2Ω 5% 0603
3517	2322 702 60108	1Ω 5% 0603
3518	2322 702 60108	1Ω 5% 0603
4101	2322 702 96001	Jumper max 0.05 Ohm
4102	2322 702 96001	Jumper max 0.05 Ohm
4103	2322 702 96001	Jumper max 0.05 Ohm
4104	2322 702 96001	Jumper max 0.05 Ohm
4111	3198 031 90010	Jumper 0402
4112	3198 031 90010	Jumper 0402
4120	3198 031 90010	Jumper 0402
4121	3198 031 90010	Jumper 0402
4122	3198 031 90010	Jumper 0402
4123	3198 031 90010	Jumper 0402
4124	2322 702 96001	Jumper max 0.05 Ohm
4125	2322 702 96001	Jumper max 0.05 Ohm
4126	2322 702 96001	Jumper max 0.05 Ohm
4127	2322 702 96001	Jumper max 0.05 Ohm
4128	2322 702 96001	Jumper max 0.05 Ohm
4129	2322 702 96001	Jumper max 0.05 Ohm
4130	2322 702 96001	Jumper max 0.05 Ohm
4210	3198 031 90010	Jumper 0402
4301	3198 031 90010	Jumper 0402
4302	3198 031 90010	Jumper 0402
4303	3198 031 90010	Jumper 0402
4304	3198 031 90010	Jumper 0402
4305	3198 031 90010	Jumper 0402
4306	3198 031 90010	Jumper 0402
4307	3198 031 90010	Jumper 0402
4308	3198 031 90010	Jumper 0402
4309	3198 031 90010	Jumper 0402
4310	3198 031 90010	Jumper 0402
4501	2322 702 96001	Jumper max 0.05 Ohm

5106	3198 018 53380	3.3µH 10% 0603
5107	2422 535 94134	10µH 20% 0805
5111	2422 535 94134	10µH 20% 0805
5113	2422 549 43769	Bead 30Ω at 100MHz
5210	2422 549 43769	Bead 30Ω at 100MHz
5211	2422 549 43769	Bead 30Ω at 100MHz
5212	2422 549 43769	Bead 30Ω at 100MHz
5213	2422 549 43769	Bead 30Ω at 100MHz
5214	2422 549 43769	Bead 30Ω at 100MHz
5215	2422 549 43769	Bead 30Ω at 100MHz
5501	2422 536 01527	10µH 20% NR10050
5502	2422 536 01017	10µH 20% NP06D

6110	9340 549 45115	BAS316
6111	9322 134 46685	SML-310MT
6501	9322 101 32668	SM SS36-E3
6502	9340 549 45115	BAS316
6503	9340 548 59115	PDZ10B
6505	3198 020 51890	BZX384-C18

7101	9322 160 50668	LD1117DT25
7102	9322 160 70668	SI4936ADY
7103	9322 182 77668	L6910
7104	9322 215 24668	LD1117DT12
7106	9322 210 01668	EPCS4SI8N
7107	9340 217 70115	BC847BW
7201	9322 243 97671	EP-2C5F256C7N
7501	9322 033 40668	MC34063ADG
7502	9340 570 20118	FET PHD63NQ03LT
7503	9335 897 60215	BC857B

Small Signal Board [B]

Various

1104	2422 543 01386	Xtal 4MHz 20p
1160	3139 147 21461	Tuner UV1338/A F S H-4
1161	2422 549 44377	Filter 45.75MHz
1201	2422 543 01133	Xtal 14.32MHz 20pF
1210	2422 549 45325	Bead 67Ω at 100MHz
1211	2422 549 45325	Bead 67Ω at 100MHz
1212	2422 549 45325	Bead 67Ω at 100MHz
1213	2422 549 45325	Bead 67Ω at 100MHz
1214	2422 549 45325	Bead 67Ω at 100MHz
1215	2422 549 45325	Bead 67Ω at 100MHz
1216	2422 549 45325	Bead 67Ω at 100MHz
1217	2422 549 45325	Bead 67Ω at 100MHz
1218	2422 549 45325	Bead 67Ω at 100MHz
1301	2422 543 01526	Xtal 10MHz 12p NX8045
1304	2422 025 10655	Connector 11p m
1311	2422 025 18738	Connector 3p m
1314	2422 025 18749	Connector 3p m
1411	2422 543 01461	Xtal 18.432MHz 12p
1601	2422 033 00563	Sock. 2p f Cinch/mdin Y
1603	2422 026 05647	Cinch 2P F 2L1
1615	2422 026 05953	Sock. Cinch 5P6 f 2L3 Y
1735	2422 025 09406	Connector 4p m
1810	2422 033 00617	Socket HDMI
1811	2422 033 00617	Socket HDMI
1823	2422 543 01517	Xtal 28M322 18p NX5032
1C01	2422 025 10769	Connector 9p m
1G51	2422 025 18772	Connector 30p m
1M01	2422 025 20428	Socket SUBD V 15p
1M02	2422 026 04734	Socket phone 3.5mm
1M03	2422 026 05953	Sock. Cinch 5P6 f 2L3 Y
1M04	2422 026 05655	Cinch 3p f RdWhYe
1M20	2422 025 09407	Connector 7p m
1P11	2422 025 08151	Connector 8p m

⊣⊢

2123	3198 017 31520	1.5nF 20% 50V 0603
2125	3198 017 44740	470nF 10V 0603
2126	3198 017 42240	220nF 16V Y5V 0603
2127	3198 016 32290	22pF 10% 50V 0603
2128	3198 017 31030	10nF 20% 50V 0603
2133	3198 017 31030	10nF 20% 50V 0603
2136	3198 017 44740	470nF 10V 0603
2137	3198 017 31030	10nF 20% 50V 0603
2138	3198 017 31030	10nF 20% 50V 0603
2139	3198 016 33910	390pF 50V NP0 0603
2143	3198 017 31020	1nF 20% 50V 0603
2144	3198 017 31030	10nF 20% 50V 0603
2145	3198 017 31020	1nF 20% 50V 0603
2158	3198 023 41040	100nF 10% 100V 0603
2159	3198 023 41040	100nF 10% 100V 0603
2160	2020 552 00033	330nF 10% 16V 0603
2161	3198 017 31040	100nF 20% 50V 0603
2162	2020 552 00343	22µF 10% 16V
2163	3198 017 31030	10nF 20% 50V 0603
2164	3198 017 31030	10nF 20% 50V 0603
2165	3198 016 31590	15pF 10% 50V 0603
2166	3198 016 31590	15pF 10% 50V 0603
2167	2020 552 00132	2.2µF 10% 10V
2169	3198 024 44730	47nF 50V 0603
2170	3198 030 82280	2.2µF 20% 50V
2171	3198 017 31030	10nF 20% 50V 0603
2172	2020 552 00211	22µF 10% 16V 1210
2173	2020 552 00211	22µF 10% 16V 1210
2174	2020 552 00211	22µF 10% 16V 1210
2175	2020 552 00343	22µF 10% 16V
2207	3198 017 31040	100nF 20% 50V 0603
2208	3198 030 41010	100µF 20% 16V
2209	3198 030 41010	100µF 20% 16V
2210	3198 017 31040	100nF 20% 50V 0603
2211	2020 552 00291	10µF 20% 6V3 0603
2212	3198 017 31040	100nF 20% 50V 0603
2213	3198 017 31040	100nF 20% 50V 0603
2214	3198 017 31040	100nF 20% 50V 0603
2215	3198 017 31040	100nF 20% 50V 0603
2216	2020 552 00291	10µF 20% 6V3 0603
2217	3198 017 31040	100nF 20% 50V 0603
2218	3198 017 31040	100nF 20% 50V 0603
2219	3198 017 31040	100nF 20% 50V 0603
2220	3198 017 31040	100nF 20% 50V 0603
2221	3198 017 31040	100nF 20% 50V 0603
2222	3198 017 31040	100nF 20% 50V 0603
2223	3198 017 31040	100nF 20% 50V 0603
2224	3198 017 31040	100nF 20% 50V 0603
2225	3198 017 31040	100nF 20% 50V 0603
2226	3198 017 31040	100nF 20% 50V 0603
2227	3198 017 31040	100nF 20% 50V 0603
2228	3198 017 31040	100nF 20% 50V 0603
2229	3198 027 02290	Jumper 0603
2230	2020 552 00291	10µF 20% 6V3 0603
2231	3198 017 31040	100nF 20% 50V 0603
2232	3198 017 31040	100nF 20% 50V 0603
2233	3198 017 31040	100nF 20% 50V 0603
2234	3198 017 31040	100nF 20% 50V 0603
2235	3198 017 31040	100nF 20% 50V 0603
2236	2020 552 00291	10µF 20% 6V3 0603
2237	3198 017 31040	100nF 20% 50V 0603
2238	3198 017 31040	100nF 20% 50V 0603
2239	3198 017 31040	100nF 20% 50V 0603
2240	3198 017 31040	100nF 20% 50V 0603
2241	3198 017 31040	100nF 20% 50V 0603
2242	3198 017 31040	100nF 20% 50V 0603
2243	3198 017 31040	100nF 20% 50V 0603
2244	3198 017 31040	100nF 20% 50V 0603
2245	3198 017 31040	100nF 20% 50V 0603
2246	2020 552 96749	20pF 5% 50V 0603
2247	2020 552 96749	20pF 5% 50V 0603
2248	2020 552 96448	1µF 10% 16V 0805
2250	3198 017 31040	100nF 20% 50V 0603
2251	3198 017 31040	100nF 20% 50V 0603
2252	3198 017 31040	100nF 20% 50V 0603
2253	3198 017 31040	100nF 20% 50V 0603
2254	3198 017 31040	100nF 20% 50V 0603
2255	3198 017 31040	100nF 20% 50V 0603
2256	3198 017 31040	100nF 20% 50V 0603
2257	3198 017 31040	100nF 20% 50V 0603
2258	3198 017 31040	100nF 20% 50V 0603
2259	3198 017 31040	100nF 20% 50V 0603
2260	3198 017 31040	100nF 20% 50V 0603
2261	3198 017 31040	100nF 20% 50V 0603
2266	3198 017 31040	100nF 20% 50V 0603
2268	3198 017 31040	100nF 20% 50V 0603
2269	3198 017 31040	100nF 20% 50V 0603
2270	3198 017 31040	100nF 20% 50V 0603
2271	3198 017 31040	100nF 20% 50V 0603
2272	3198 017 31040	100nF 20% 50V 0603
2273	3198 017 31040	100nF 20% 50V 0603
2274	3198 017 31040	100nF 20% 50V 0603
2275	2238 586 15628	2.7nF 10% 50V 0603
2276	2238 586 15628	2.7nF 10% 50V 0603
2277	3198 017 31040	100nF 20% 50V 0603
2279	2020 552 00291	10µF 20% 6V3 0603
2280	2020 552 00291	10µF 20% 6V3 0603
2282	2020 552 00291	10µF 20% 6V3 0603
2283	3198 016 31010	100pF 10% 50V 0603
2284	2020 552 00291	10µF 20% 6V3 0603
2285	3198 016 31010	100pF 10% 50V 0603
2286	2020 552 00291	10µF 20% 6V3 0603
2287	2020 552 00291	10µF 20% 6V3 0603
2288	2020 552 00291	10µF 20% 6V3 0603
2289	2020 552 00291	10µF 20% 6V3 0603
2290	2020 552 00291	10µF 20% 6V3 0603
2291	2020 552 00291	10µF 20% 6V3 0603
2292	2020 552 00291	10µF 20% 6V3 0603
2293	2020 552 00291	10µF 20% 6V3 0603
2294	3198 017 31040	100nF 20% 50V 0603
2295	3198 017 31040	100nF 20% 50V 0603
2296	3198 017 31040	100nF 20% 50V 0603
2297	3198 027 02290	Jumper 0603
2298	3198 017 31040	100nF 20% 50V 0603
2310	3198 017 31040	100nF 20% 50V 0603
2311	2020 552 00291	10µF 20% 6V3 0603
2312	3198 017 31040	100nF 20% 50V 0603
2313	3198 017 31040	100nF 20% 50V 0603
2314	3198 016 31590	15pF 10% 50V 0603
2315	3198 017 31040	100nF 20% 50V 0603
2316	3198 016 31590	15pF 10% 50V 0603
2317	3198 017 31040	100nF 20% 50V 0603
2318	3198 017 31040	100nF 20% 50V 0603
2320	3198 017 31040	100nF 20% 50V 0603
2323	3198 017 31040	100nF 20% 50V 0603
2327	3198 017 31030	10nF 20% 50V 0603
2329	3198 017 31020	1nF 20% 50V 0603
2330	3198 017 31020	1nF 20% 50V 0603
2331	3198 017 31020	1nF 20% 50V 0603
2332	3198 017 31020	1nF 20% 50V 0603
2333	3198 017 31020	1nF 20% 50V 0603
2335	3198 017 31020	1nF 20% 50V 0603
2336	3198 017 31020	1nF 20% 50V 0603
2337	3198 017 31020	1nF 20% 50V 0603
2338	3198 017 32240	220nF 20% 10V 0603
2408	3198 017 34710	470pF 50V X7R 0603
2409	3198 017 31520	1.5nF 20% 50V 0603
2410	2020 021 00349	330uF 20% 16V
2411	2020 552 00291	10µF 20% 6V3 0603
2412	3198 016 32210	220pF 10% 50V 0603
2413	3198 016 32210	220pF 10% 50V 0603
2414	2020 552 00291	10µF 20% 6V3 0603
2415	3198 016 33380	3.3pF 50V 0603
2416	3198 016 33380	3.3pF 50V 0603
2417	3198 017 33310	330pF 50V X7R 0603
2418	3198 017 33310	330pF 50V X7R 0603
2419	3198 017 31040	100nF 20% 50V 0603
2420	3198 030 41090	10µF 20% 16V
2421	3198 016 33310	330pF 1% 50V 0603
2422	3198 016 33310	330pF 1% 50V 0603
2423	3198 030 41090	10µF 20% 16V
2426	2020 552 00291	10µF 20% 6V3 0603
2427	2020 552 00291	10µF 20% 6V3 0603
2428	3198 016 31010	100pF 10% 50V 0603
2429	3198 016 31010	100pF 10% 50V 0603
2432	3198 016 33390	33pF 50V NP0 0603
2433	3198 016 34790	47pF 10% 50V 0603
2434	3198 016 34790	47pF 10% 50V 0603
2435	3198 016 34790	47pF 10% 50V 0603
2436	2020 552 00291	10µF 20% 6V3 0603
2437	2020 552 00291	10µF 20% 6V3 0603
2438	3198 017 31040	100nF 20% 50V 0603
2439	2020 552 00247	470nF 10% 25V
2440	2020 552 00247	470nF 10% 25V
2441	3198 017 31520	1.5nF 20% 50V 0603
2442	3198 017 34710	470pF 50V X7R 0603
2443	3198 017 31520	1.5nF 20% 50V 0603
2444	3198 017 34710	470pF 50V X7R 0603
2445	3198 017 31040	100nF 20% 50V 0603
2448	3198 016 31510	150pF 10% 50V 0603
2449	3198 016 31810	180pF 10% 50V 0603
2607	3198 017 32240	220nF 20% 10V 0603
2608	3198 017 33320	3.3nF 50V 0603
2610	3198 017 32240	220nF 20% 10V 0603
2612	3198 017 33320	3.3nF 50V 0603
2613	3198 017 33320	3.3nF 50V 0603
2614	3198 017 32240	220nF 20% 10V 0603
2615	3198 017 32240	220nF 20% 10V 0603
2616	3198 017 33320	3.3nF 50V 0603
2617	2020 552 96807	1µF 10% 10V 0603
2801	3198 023 41040	100nF 10% 100V 0603
2802	3198 023 41040	100nF 10% 100V 0603
2803	3198 017 31040	100nF 20% 50V 0603
2804	3198 017 31040	100nF 20% 50V 0603
2809	3198 017 41030	10nF 50V Y5V 0603
2810	3198 017 41030	10nF 50V Y5V 0603
2813	3198 016 31890	18pF 1% 50V 0603
2816	3198 017 31020	1nF 20% 50V 0603
2817	3198 017 31040	100nF 20% 50V 0603
2818	3198 023 41040	100nF 10% 100V 0603
2819	3198 023 41040	100nF 10% 100V 0603
2820	3198 023 41040	100nF 10% 100V 0603
2828	3198 016 31890	18pF 1% 50V 0603
2829	3198 023 41040	100nF 10% 100V 0603
2830	3198 023 41040	100nF 10% 100V 0603
2833	3198 023 41040	100nF 10% 100V 0603
2835	3198 017 31040	100nF 20% 50V 0603
2836	3198 017 31040	100nF 20% 50V 0603
2838	3198 023 41040	100nF 10% 100V 0603
2839	3198 017 31040	100nF 20% 50V 0603
2840	3198 023 41040	100nF 10% 100V 0603
2843	3198 017 31040	100nF 20% 50V 0603
2844	3198 017 31040	100nF 20% 50V 0603
2845	3198 023 41040	100nF 10% 100V 0603
2847	3198 017 31020	1nF 20% 50V 0603
2848	3198 017 31020	1nF 20% 50V 0603
2849	3198 017 31020	1nF 20% 50V 0603
2850	3198 017 31020	1nF 20% 50V 0603
2851	3198 017 31020	1nF 20% 50V 0603
2852	3198 017 31020	1nF 20% 50V 0603
2853	3198 017 31020	1nF 20% 50V 0603
2854	3198 017 31020	1nF 20% 50V 0603
2855	3198 016 31020	1nF 25V 0603
2856	3198 017 31020	1nF 20% 50V 0603
2857	3198 017 31020	1nF 20% 50V 0603
2858	3198 017 31020	1nF 20% 50V 0603
2859	3198 017 31020	1nF 20% 50V 0603
2860	3198 017 31020	1nF 20% 50V 0603
2861	3198 017 31020	1nF 20% 50V 0603
2865	3198 016 31020	1nF 25V 0603
2866	3198 017 31020	1nF 20% 50V 0603
2867	3198 017 31020	1nF 20% 50V 0603
2868	3198 017 31020	1nF 20% 50V 0603
2869	3198 017 31020	1nF 20% 50V 0603
2870	3198 017 31020	1nF 20% 50V 0603
2871	3198 017 31020	1nF 20% 50V 0603
2872	3198 017 31020	1nF 20% 50V 0603
2873	3198 017 31020	1nF 20% 50V 0603
2874	3198 016 31020	1nF 25V 0603
2875	3198 017 31020	1nF 20% 50V 0603
2876	3198 017 31020	1nF 20% 50V 0603
2878	3198 017 31040	100nF 20% 50V 0603
2879	3198 016 31020	1nF 25V 0603
2901	3198 016 33390	33pF 50V NP0 0603
2902	3198 017 44740	470nF 10V 0603
2903	3198 030 41010	100µF 20% 16V
2904	3198 017 44740	470nF 10V 0603
2905	3198 016 33390	33pF 50V NP0 0603
2906	3198 030 41010	100µF 20% 16V

2907	3198 017 44740	470nF 10V 0603
2908	3198 017 32240	220nF 20% 10V 0603
2913	3198 017 32240	220nF 20% 10V 0603
2940	3198 030 24790	1uF 5% 10V 0603
2A01	3198 017 31040	100nF 20% 50V 0603
2A02	3198 017 31040	100nF 20% 50V 0603
2A04	2020 021 00215	220µF 20% 25V
2A08	2020 021 00215	220µF 20% 25V
2A09	3198 017 31040	100nF 20% 50V 0603
2A10	3198 017 31040	100nF 20% 50V 0603
2A11	2020 552 96807	1µF 10% 10V 0603
2A12	3198 016 32210	220pF 10% 50V 0603
2A13	3198 017 42240	220nF 16V Y5V 0603
2A14	2020 552 00247	470nF 10% 25V
2A15	2020 552 96807	1µF 10% 10V 0603
2A16	2020 552 96807	1µF 10% 10V 0603
2A17	3198 016 31020	1nF 25V 0603
2A18	3198 016 31020	1nF 25V 0603
2A19	3198 016 32210	220pF 10% 50V 0603
2A20	2020 552 96807	1µF 10% 10V 0603
2A21	3198 016 31020	1nF 25V 0603
2A22	3198 017 31040	100nF 20% 50V 0603
2A23	3198 016 31020	1nF 25V 0603
2A24	3198 017 31040	100nF 20% 50V 0603
2A25	3198 017 31530	15nF 20% 50V 0603
2A26	3198 017 42240	220nF 16V Y5V 0603
2A27	3198 017 31530	15nF 20% 50V 0603
2A28	2020 552 00247	470nF 10% 25V
2A29	3198 017 31040	100nF 20% 50V 0603
2A30	3198 017 31040	100nF 20% 50V 0603
2A31	3198 016 31020	1nF 25V 0603
2A32	3198 016 31020	1nF 25V 0603
2A33	3198 017 31040	100nF 20% 50V 0603
2A34	3198 017 31040	100nF 20% 50V 0603
2A35	3198 016 31020	1nF 25V 0603
2A36	3198 016 31020	1nF 25V 0603
2A37	3198 017 42240	220nF 16V Y5V 0603
2A38	3198 017 42240	220nF 16V Y5V 0603
2A40	2020 552 00247	470nF 10% 25V
2A41	2020 552 96807	1µF 10% 10V 0603
2A45	3198 016 31020	1nF 25V 0603
2A46	3198 024 44730	47nF 50V 0603
2A47	3198 024 44730	47nF 50V 0603
2B10	3198 030 41010	100µF 20% 16V
2B11	3198 017 31030	10nF 20% 50V 0603
2B12	2020 552 00211	22µF 10% 16V 1210
2B13	2020 012 00003	470µF 16V 20% SMD
2B14	3198 017 32210	220pF 20% 50V 0603
2B15	3198 017 32230	22nF 20% 25V 0603
2B17	3198 017 31040	100nF 20% 50V 0603
2B18	3198 030 41090	10µF 20% 16V
2B19	3198 030 72290	22µF 20% 35V
2B20	3198 016 31010	100pF 10% 50V 0603
2B21	3198 030 41090	10µF 20% 16V
2B22	3198 030 74780	4u7 20% 35V
2B24	3198 030 44790	47µF 20% 16V SMD
2B25	3198 017 31040	100nF 20% 50V 0603
2C55	3198 017 31020	1nF 20% 50V 0603
2C56	3198 017 31020	1nF 20% 50V 0603
2C57	3198 017 31020	1nF 20% 50V 0603
2L24	3198 017 32240	220nF 20% 10V 0603
2L25	3198 017 32240	220nF 20% 10V 0603
2M04	3198 017 31040	100nF 20% 50V 0603
2M05	3198 016 33310	330pF 1% 50V 0603
2M06	3198 016 33310	330pF 1% 50V 0603
2M07	3198 017 31040	100nF 20% 50V 0603
2M09	3198 016 31010	100pF 10% 50V 0603
2M10	3198 016 31010	100pF 10% 50V 0603
2M20	3198 017 42240	220nF 16V Y5V 0603
2M21	3198 017 33320	3.3nF 50V 0603
2M22	3198 017 42240	220nF 16V Y5V 0603
2M23	3198 017 33320	3.3nF 50V 0603
2M33	3198 017 42240	220nF 16V Y5V 0603
2M34	3198 017 33320	3.3nF 50V 0603
2M35	3198 017 42240	220nF 16V Y5V 0603
2M36	3198 017 33320	3.3nF 50V 0603
2M40	3198 017 32240	220nF 20% 10V 0603
2M41	3198 017 32240	220nF 20% 10V 0603
2M43	3198 017 33310	330pF 50V X7R 0603
2M44	3198 017 33310	330pF 50V X7R 0603
2M45	3198 017 33310	330pF 50V X7R 0603
2M46	3198 017 33310	330pF 50V X7R 0603
2M67	3198 016 34790	47pF 10% 50V 0603
2M68	3198 016 34790	47pF 10% 50V 0603
2M69	3198 016 34790	47pF 10% 50V 0603
2M70	3198 016 31020	1nF 25V 0603
2M71	3198 016 31020	1nF 25V 0603

–WW–

3123	3198 021 33310	330Ω 5% 0.062W 0603
3124	3198 021 31010	100Ω 5% 0.062W 0603
3125	3198 021 31510	150Ω 5% 0.062W 0603
3126	3198 021 31810	180Ω 5% 0.062W 0603
3127	3198 021 35620	5.6kΩ 5% 0.062W 0603
3128	3198 021 31010	100Ω 5% 0.062W 0603
3129	3198 021 31010	100Ω 5% 0.062W 0603
3135	3198 021 31590	15Ω 5% 0.062W 0603
3170	3198 021 38220	8.2kΩ 5% 0.062W 0603
3171	3198 021 35620	5.6kΩ 5% 0.062W 0603
3173	3198 021 31020	1kΩ 5% 0.062W 0603
3176	3198 021 33930	39kΩ 5% 0.062W 0605
3178	2120 108 94132	1Ω 1206
3179	2120 108 94132	1Ω 1206
3201	3198 031 11010	4 x 100Ω 5% 1206
3202	3198 031 11010	4 x 100Ω 5% 1206
3203	3198 031 12210	Netw. 4*220 Ohm 5%
3204	3198 031 12210	Netw. 4*220 Ohm 5%
3211	3198 021 31020	1kΩ 5% 0.062W 0603
3212	3198 021 31010	100Ω 5% 0.062W 0603
3213	3198 021 34730	47kΩ 5% 0603
3215	3198 021 31010	100Ω 5% 0.062W 0603
3216	3198 021 34790	47Ω 5% 0603
3217	3198 021 34730	47kΩ 5% 0603
3221	3198 021 34720	4.7kΩ 5% 0603
3222	3198 021 34720	4.7kΩ 5% 0603
3239	3198 021 31010	100Ω 5% 0.062W 0603
3241	3198 021 32210	220Ω 5% 0603
3242	3198 021 34720	4.7kΩ 5% 0603
3243	3198 021 31010	100Ω 5% 0.062W 0603
3244	3198 021 32290	22Ω 5% 0603
3245	3198 021 31030	10kΩ 5% 0.062W 0603
3246	3198 021 31010	100Ω 5% 0.062W 0603
3247	3198 021 31010	100Ω 5% 0.062W 0603
3248	3198 021 32290	22Ω 5% 0603
3253	3198 021 32290	22Ω 5% 0603
3256	3198 021 32290	22Ω 5% 0603
3260	3198 031 12290	4*22 Ohm 5% 1206
3261	3198 031 12290	4*22 Ohm 5% 1206
3262	3198 031 12290	4*22 Ohm 5% 1206
3263	3198 031 12290	4*22 Ohm 5% 1206
3264	3198 031 12290	4*22 Ohm 5% 1206
3265	3198 031 12290	4*22 Ohm 5% 1206
3266	3198 021 32290	22Ω 5% 0603
3267	3198 021 32290	22Ω 5% 0603
3268	3198 031 12290	4*22 Ohm 5% 1206
3271	3198 031 12290	4*22 Ohm 5% 1206
3300	3198 021 31220	1.2kΩ 5% 0.062W 0603
3303	3198 021 31010	100Ω 5% 0.062W 0603
3305	3198 021 33320	3.3kΩ 5% 0.062W 0603
3308	3198 021 33320	3.3kΩ 5% 0.062W 0603
3310	3198 021 31020	1kΩ 5% 0.062W 0603
3313	3198 021 33310	330Ω 5% 0.062W 0603
3314	3198 021 31030	10kΩ 5% 0.062W 0603
3315	3198 021 31010	100Ω 5% 0.062W 0603
3316	3198 021 31030	10kΩ 5% 0.062W 0603
3318	3198 021 31010	100Ω 5% 0.062W 0603
3319	3198 021 31030	10kΩ 5% 0.062W 0603
3323	3198 021 31010	100Ω 5% 0.062W 0603
3324	3198 021 33310	330Ω 5% 0.062W 0603
3325	3198 021 31030	10kΩ 5% 0.062W 0603
3329	3198 021 31010	100Ω 5% 0.062W 0603
3336	3198 021 31010	100Ω 5% 0.062W 0603
3338	3198 021 31010	100Ω 5% 0.062W 0603
3339	3198 021 31010	100Ω 5% 0.062W 0603
3340	3198 021 31010	100Ω 5% 0.062W 0603
3341	3198 021 31010	100Ω 5% 0.062W 0603
3342	3198 021 31010	100Ω 5% 0.062W 0603
3343	3198 021 31010	100Ω 5% 0.062W 0603
3345	3198 021 31010	100Ω 5% 0.062W 0603
3346	3198 021 31010	100Ω 5% 0.062W 0603
3347	3198 021 31030	10kΩ 5% 0.062W 0603
3348	3198 021 34790	47Ω 5% 0603
3349	3198 021 31030	10kΩ 5% 0.062W 0603
3350	3198 021 31030	10kΩ 5% 0.062W 0603
3351	3198 021 31020	1kΩ 5% 0.062W 0603
3352	3198 021 31020	1kΩ 5% 0.062W 0603
3353	3198 021 31030	10kΩ 5% 0.062W 0603
3354	3198 021 31010	100Ω 5% 0.062W 0603
3355	3198 021 31010	100Ω 5% 0.062W 0603
3356	3198 021 31010	100Ω 5% 0.062W 0603
3357	3198 021 31010	100Ω 5% 0.062W 0603
3361	3198 021 31010	100Ω 5% 0.062W 0603
3364	3198 021 31010	100Ω 5% 0.062W 0603
3365	3198 021 31010	100Ω 5% 0.062W 0603
3366	3198 021 31030	10kΩ 5% 0.062W 0603
3368	3198 021 31010	100Ω 5% 0.062W 0603
3372	3198 021 34720	4.7kΩ 5% 0603
3373	3198 021 31010	100Ω 5% 0.062W 0603
3375	3198 021 34720	4.7kΩ 5% 0603
3377	3198 021 33320	3.3kΩ 5% 0.062W 0603
3378	3198 021 31010	100Ω 5% 0.062W 0603
3379	3198 021 33320	3.3kΩ 5% 0.062W 0603
3380	3198 021 31010	100Ω 5% 0.062W 0603
3381	3198 021 32290	22Ω 5% 0603
3382	3198 021 31010	100Ω 5% 0.062W 0603
3383	3198 021 34730	47kΩ 5% 0603
3384	3198 021 32290	22Ω 5% 0603
3385	3198 021 34730	47kΩ 5% 0603
3386	3198 021 31010	100Ω 5% 0.062W 0603
3387	3198 021 31010	100Ω 5% 0.062W 0603
3388	3198 021 31010	100Ω 5% 0.062W 0603
3389	3198 021 34790	47Ω 5% 0603
3390	3198 021 34790	47Ω 5% 0603
3391	3198 021 34790	47Ω 5% 0603
3393	3198 021 31530	15kΩ 5% 0603
3394	3198 021 32230	22kΩ 5% 0603
3395	3198 021 31520	1.5kΩ 5% 0.062W 0603
3396	3198 021 31020	1kΩ 5% 0.062W 0603
3397	3198 021 34730	47kΩ 5% 0603
3398	3198 021 31040	100kΩ 5% 0.062W 0603
3399	3198 021 31030	10kΩ 5% 0.062W 0603
3402	2120 108 94132	1Ω 1206
3410	3198 021 31010	100Ω 5% 0.062W 0603
3411	3198 021 31010	100Ω 5% 0.062W 0603
3416	3198 021 32220	2.2kΩ 5% 0603
3419	3198 021 31010	100Ω 5% 0.062W 0603
3420	3198 021 31010	100Ω 5% 0.062W 0603
3600	3198 021 31090	10Ω 5% 0.062W 0603
3601	3198 021 37590	75Ω 5% 0603
3602	3198 021 31090	10Ω 5% 0.062W 0603
3603	3198 021 37590	75Ω 5% 0603
3604	3198 021 37590	75Ω 5% 0603
3605	3198 021 37590	75Ω 5% 0603
3607	3198 021 31510	150Ω 5% 0.062W 0603
3608	3198 021 33330	33kΩ 5% 0.062W 0603
3609	3198 021 37590	75Ω 5% 0603
3611	3198 021 31510	150Ω 5% 0.062W 0603
3612	3198 021 33330	33kΩ 5% 0.062W 0603
3613	3198 021 37590	75Ω 5% 0603
3615	3198 021 33330	33kΩ 5% 0.062W 0603
3616	3198 021 33330	33kΩ 5% 0.062W 0603
3617	3198 021 31010	100Ω 5% 0.062W 0603
3618	3198 021 31010	100Ω 5% 0.062W 0603
3619	3198 021 31010	100Ω 5% 0.062W 0603
3620	3198 021 31510	150Ω 5% 0.062W 0603
3621	3198 021 31510	150Ω 5% 0.062W 0603
3622	3198 021 31020	1kΩ 5% 0.062W 0603
3623	3198 021 31040	100kΩ 5% 0.062W 0603
3624	3198 021 35630	56kΩ 5% 0.062W 0603
3625	3198 021 32210	220Ω 5% 0603
3801	3198 021 34730	47kΩ 5% 0603
3802	3198 021 34730	47kΩ 5% 0603
3809	3198 021 31030	10kΩ 5% 0.062W 0603
3810	3198 021 34720	4.7kΩ 5% 0603
3811	3198 021 34720	4.7kΩ 5% 0603
3815	3198 021 31050	1MΩ 5% 0603
3819	3198 021 33390	33Ω 5% 0.062W 0603
3820	3198 021 31030	10kΩ 5% 0.062W 0603
3828	3198 021 34720	4.7kΩ 5% 0603
3830	3198 021 34720	4.7kΩ 5% 0603
3831	3198 021 34730	47kΩ 5% 0603
3832	3198 021 34730	47kΩ 5% 0603
3833	3198 021 34720	4.7kΩ 5% 0603
3834	3198 021 34720	4.7kΩ 5% 0603
3835	3198 021 33390	33Ω 5% 0.062W 0603
3846	3198 021 34720	4.7kΩ 5% 0603
3850	3198 021 31030	10kΩ 5% 0.062W 0603
3851	3198 031 13390	4 x 33Ω 5% 1206
3852	3198 031 13390	4 x 33Ω 5% 1206
3853	3198 031 13390	4 x 33Ω 5% 1206
3854	3198 031 13390	4 x 33Ω 5% 1206
3855	3198 031 13390	4 x 33Ω 5% 1206
3856	3198 031 13390	4 x 33Ω 5% 1206
3857	3198 021 33390	33Ω 5% 0.062W 0603
3858	3198 021 33390	33Ω 5% 0.062W 0603
3859	3198 021 33390	33Ω 5% 0.062W 0603
3860	3198 021 33390	33Ω 5% 0.062W 0603
3862	3198 021 31020	1kΩ 5% 0.062W 0603
3863	3198 021 32220	2.2kΩ 5% 0603
3864	3198 021 31010	100Ω 5% 0.062W 0603
3877	3198 021 32220	2.2kΩ 5% 0603
3880	3198 021 31020	1kΩ 5% 0.062W 0603
3881	3198 021 32220	2.2kΩ 5% 0603
3882	3198 021 31010	100Ω 5% 0.062W 0603
3883	3198 021 32220	2.2kΩ 5% 0603
3884	3198 021 33390	33Ω 5% 0.062W 0603
3885	3198 021 33390	33Ω 5% 0.062W 0603
3886	3198 021 33390	33Ω 5% 0.062W 0603
3896	3198 021 31010	100Ω 5% 0.062W 0603
3897	3198 021 31010	100Ω 5% 0.062W 0603
3901	3198 021 34730	47kΩ 5% 0603
3902	2322 702 60124	120k Ohm 5% 0603
3904	3198 021 33390	33Ω 5% 0.062W 0603
3905	3198 021 34730	47kΩ 5% 0603
3906	3198 021 31040	100kΩ 5% 0.062W 0603
3907	3198 021 31040	100kΩ 5% 0.062W 0603
3908	2322 702 60124	120k Ohm 5% 0603
3910	3198 021 33390	33Ω 5% 0.062W 0603
3911	3198 021 31030	10kΩ 5% 0.062W 0603
3912	3198 021 31030	10kΩ 5% 0.062W 0603

3915	3198 021 31020	1kΩ 5% 0.062W 0603
3916	3198 021 31020	1kΩ 5% 0.062W 0603
3917	3198 021 31020	1kΩ 5% 0.062W 0603
3918	3198 021 31020	1kΩ 5% 0.062W 0603
3934	3198 021 34720	4.7kΩ 5% 0603
3935	3198 021 34720	4.7kΩ 5% 0603
3937	3198 021 31030	10kΩ 5% 0.062W 0603
3938	3198 021 31030	10kΩ 5% 0.062W 0603
3942	3198 021 31020	1kΩ 5% 0.062W 0603
3943	3198 021 31030	10kΩ 5% 0.062W 0603
3A01	2120 108 94133	R Fuse 10Ω
3A02	2120 108 94133	R Fuse 10Ω
3A03	3198 021 31030	10kΩ 5% 0.062W 0603
3A04	3198 021 31230	12kΩ 5% 0.062W 0603
3A05	2322 762 60229	22Ω 5% 1005
3A06	3198 021 31030	10kΩ 5% 0.062W 0603
3A07	3198 021 31030	10kΩ 5% 0.062W 0603
3A08	3198 021 31230	12kΩ 5% 0.062W 0603
3A09	3198 021 31090	10Ω 5% 0.062W 0603
3A11	3198 021 31030	10kΩ 5% 0.062W 0603
3A12	3198 021 31050	1MΩ 5% 0603
3A13	3198 021 33930	39kΩ 5% 0.062W 0605
3A14	2322 762 60229	22Ω 5% 1005
3A15	3198 021 31050	1MΩ 5% 0603
3A17	3198 021 31090	10Ω 5% 0.062W 0603
3A19	3198 021 31030	10kΩ 5% 0.062W 0603
3A26	3198 021 32230	22kΩ 5% 0603
3A27	3198 021 32240	220kΩ 5% 0603
3A28	3198 021 32240	220kΩ 5% 0603
3A29	3198 021 34730	47kΩ 5% 0603
3A30	3198 021 34730	47kΩ 5% 0603
3A31	3198 021 31030	10kΩ 5% 0.062W 0603
3B11	3198 021 34720	4.7kΩ 5% 0603
3B12	2322 704 64701	470 Ohm 1% 0603
3B13	3198 021 32210	220Ω 5% 0603
3B14	2322 704 61002	1kΩ 1%
3B15	3198 021 31020	1kΩ 5% 0.062W 0603
3B17	3198 021 36820	6.8kΩ 5% 0.062W 0603
3B18	3198 021 36820	6.8kΩ 5% 0.062W 0603
3B19	3198 021 31030	10kΩ 5% 0.062W 0603
3L01	3198 021 34720	4.7kΩ 5% 0603
3L02	3198 021 31010	100Ω 5% 0.062W 0603
3L04	3198 021 31520	1.5kΩ 5% 0.062W 0603
3L05	3198 021 31010	100Ω 5% 0.062W 0603
3L08	3198 021 31010	100Ω 5% 0.062W 0603
3L09	3198 021 31010	100Ω 5% 0.062W 0603
3L10	2120 108 94132	1Ω 1206
3L11	3198 021 31010	100Ω 5% 0.062W 0603
3L15	3198 021 33310	330Ω 5% 0.062W 0603
3L22	3198 021 90030	Jumper 0603
3L23	3198 021 90030	Jumper 0603
3M01	3198 021 31010	100Ω 5% 0.062W 0603
3M02	3198 021 37590	75Ω 5% 0603
3M03	3198 021 31010	100Ω 5% 0.062W 0603
3M04	3198 021 37590	75Ω 5% 0603
3M05	3198 021 31010	100Ω 5% 0.062W 0603
3M06	3198 021 37590	75Ω 5% 0603
3M07	3198 021 31510	150Ω 5% 0.062W 0603
3M08	3198 021 31020	1kΩ 5% 0.062W 0603
3M09	3198 021 31030	10kΩ 5% 0.062W 0603
3M10	3198 021 31030	10kΩ 5% 0.062W 0603
3M11	3198 021 31030	10kΩ 5% 0.062W 0603
3M12	3198 021 31030	10kΩ 5% 0.062W 0603
3M14	3198 021 32210	220Ω 5% 0603
3M15	3198 021 32220	2.2kΩ 5% 0603
3M18	3198 021 32210	220Ω 5% 0603
3M20	3198 021 32220	2.2kΩ 5% 0603
3M21	3198 021 31510	150Ω 5% 0.062W 0603
3M22	3198 021 33330	33kΩ 5% 0.062W 0603
3M23	3198 021 31510	150Ω 5% 0.062W 0603
3M24	3198 021 33330	33kΩ 5% 0.062W 0603
3M30	3198 021 31010	100Ω 5% 0.062W 0603
3M31	3198 021 37590	75Ω 5% 0603
3M32	3198 021 31010	100Ω 5% 0.062W 0603
3M33	3198 021 37590	75Ω 5% 0603
3M34	3198 021 31010	100Ω 5% 0.062W 0603
3M35	3198 021 37590	75Ω 5% 0603
3M36	3198 021 31510	150Ω 5% 0.062W 0603
3M37	3198 021 33330	33kΩ 5% 0.062W 0603
3M38	3198 021 31510	150Ω 5% 0.062W 0603
3M39	3198 021 33330	33kΩ 5% 0.062W 0603
3M41	3198 021 31590	15Ω 5% 0.062W 0603
3M42	3198 021 34720	4.7kΩ 5% 0603
3M43	3198 021 31020	1kΩ 5% 0.062W 0603
3M44	3198 021 36890	68Ω 5% 0.062W 0603
3M45	3198 021 31020	1kΩ 5% 0.062W 0603
3M46	3198 021 36890	68Ω 5% 0.062W 0603
3M47	3198 021 31510	150Ω 5% 0.062W 0603
3M48	3198 021 31510	150Ω 5% 0.062W 0603
4124	3198 021 90030	Jumper 0603
4163	3198 021 90030	Jumper 0603
4166	3198 021 90030	Jumper 0603
4169	3198 021 90030	Jumper 0603
4174	3198 021 90030	Jumper 0603
4175	3198 021 90030	Jumper 0603
4204	3198 021 90030	Jumper 0603
4205	3198 021 90030	Jumper 0603
4206	3198 021 90030	Jumper 0603
4309	3198 021 90030	Jumper 0603
4310	3198 021 90030	Jumper 0603
4316	3198 021 90030	Jumper 0603
4324	3198 021 90030	Jumper 0603
4326	3198 021 90030	Jumper 0603
4401	3198 021 90030	Jumper 0603
4402	3198 021 90030	Jumper 0603
4601	3198 021 90030	Jumper 0603
4901	3198 021 90030	Jumper 0603
4902	3198 021 90030	Jumper 0603
4903	3198 021 90030	Jumper 0603
4C55	3198 021 90030	Jumper 0603
4C56	3198 021 90030	Jumper 0603
4C61	3198 021 90030	Jumper 0603
4C62	3198 021 90030	Jumper 0603
4L09	3198 021 90030	Jumper 0603
4L20	3198 021 90030	Jumper 0603
4L21	3198 021 90030	Jumper 0603
4L24	3198 021 90030	Jumper 0603
4L25	3198 021 90030	Jumper 0603
4M37	3198 021 90030	Jumper 0603
4M38	3198 021 90030	Jumper 0603
4M51	3198 021 90030	Jumper 0603
4M52	3198 021 90030	Jumper 0603
4M53	3198 021 90030	Jumper 0603

5159	2422 549 44197	Bead 220Ω at 100MHz
5160	2422 549 44197	Bead 220Ω at 100MHz
5161	2422 549 44197	Bead 220Ω at 100MHz
5163	3198 018 36870	0.68µH 10%
5164	3198 018 90040	Bead 600Ω at 100MHz
5166	3198 018 90040	Bead 600Ω at 100MHz
5167	2422 536 01521	10µH 10% 1207
5168	2422 536 01521	10µH 10% 1207
5210	2422 549 42979	100MHz 60Ω 0603
5212	2422 549 42979	100MHz 60Ω 0603
5213	2422 549 42979	100MHz 60Ω 0603
5214	2422 549 42979	100MHz 60Ω 0603
5215	2422 549 44197	Bead 220Ω at 100MHz
5216	2422 549 43276	100MHz 30Ω 0603
5217	2422 549 44197	Bead 220Ω at 100MHz
5218	2422 549 42979	100MHz 60Ω 0603
5219	2422 549 42979	100MHz 60Ω 0603
5220	2422 549 42979	100MHz 60Ω 0603
5221	2422 549 42979	100MHz 60Ω 0603
5222	2422 549 42979	100MHz 60Ω 0603
5223	2422 549 42979	100MHz 60Ω 0603
5224	2422 549 42979	100MHz 60Ω 0603
5225	2422 549 42979	100MHz 60Ω 0603
5226	2422 549 42979	100MHz 60Ω 0603
5227	2422 549 42979	100MHz 60Ω 0603
5228	2422 549 42979	100MHz 60Ω 0603
5301	2422 549 42979	100MHz 60Ω 0603
5302	2422 549 42979	100MHz 60Ω 0603
5304	2422 549 01397	Bead 220Ω at 100MHz
5401	3198 018 90030	120Ω 100MHz 0603
5402	3198 018 90030	120Ω 100MHz 0603
5404	3198 018 31290	12µH 10%
5801	2422 549 44197	Bead 220Ω at 100MHz
5810	3198 018 90030	120Ω 100MHz 0603
5811	3198 018 90030	120Ω 100MHz 0603
5812	3198 018 90030	120Ω 100MHz 0603
5813	3198 018 90030	120Ω 100MHz 0603
5814	3198 018 90030	120Ω 100MHz 0603
5815	3198 018 90030	120Ω 100MHz 0603
5816	3198 018 90030	120Ω 100MHz 0603
5817	3198 018 90030	120Ω 100MHz 0603
5818	3198 018 90030	120Ω 100MHz 0603
5819	3198 018 90060	Bead 30Ω at 100MHz
5A03	2422 536 01564	22µH 20%
5A04	2422 536 01564	22µH 20%
5A05	3198 018 90060	Bead 30Ω at 100MHz
5A06	3198 018 90060	Bead 30Ω at 100MHz
5A07	2422 549 45186	Bead 100MHz 0805
5B01	2422 535 94134	10µH 20% 0805
5B02	2422 536 00779	10µH 20%
5B03	2422 536 00707	33µH 20%
5B06	2422 536 01516	68µH 20%
5B12	2422 536 01564	22µH 20%
5B13	2422 536 01564	22µH 20%
5M01	2422 549 42979	100MHz 60Ω 0603
5M13	2422 549 42893	Ind. 120 Ohm 100Mhz
5M14	2422 549 42893	Ind. 120 Ohm 100Mhz

6202	3198 020 55680	BZX384-C5V6
6301	3198 010 10630	BAS316
6306	3198 020 56880	BZX384-C6V8
6307	3198 020 56880	BZX384-C6V8
6318	9340 548 54115	PDZ6.2B
6608	9340 580 04115	PESD5V0S1BA
6615	9340 580 04115	PESD5V0S1BA
6801	3198 010 10660	BAT54
6802	3198 010 10660	BAT54
6830	3198 010 10660	BAT54
6831	3198 010 10660	BAT54
6914	3198 010 10660	BAT54
6916	3198 010 10630	BAS316
6919	3198 010 10630	BAS316
6B01	3198 010 10720	SS24
6B02	3198 020 53390	BZX384C33
6B03	3198 010 10620	BAV99
6M04	3198 010 10630	BAS316

7113	9352 723 71118	TDA9886T/V4
7114	3198 010 42030	BC847B
7160	9322 104 47668	L78M05CDT
7202	9322 240 94671	SVP CX32-LF
7203	3198 010 42310	BC847BW
7204	9322 245 45668	SVP CX32-LF
7205	9322 245 45668	SVP CX32-LF
7206	3198 010 42310	BC847BW
7208	3198 010 44110	DTC114ET
7210	9322 204 71668	SI4835BDY
7211	3198 010 70740	74LCX14T
7308	3198 010 42310	BC847BW
7310		For SW see item 0815
7311	9322 245 53671	M30300SAGP
7312	9322 229 46685	BD45275G
7315		For SW see item 0816
7316	3198 010 42310	BC847BW
7317	3198 010 42310	BC847BW
7320	9340 560 36215	Pow FET SMBSH111
7321	9340 560 36215	Pow FET SMBSH111
7322	3198 010 44110	DTC114ET
7323	9322 246 85685	NL27WZ08USG
7410	9322 198 11685	L78L08ACU
7411	9322 243 36671	MSP4450P-VK-E8
7601	3198 010 42320	BC857BW
7811		For SW see item 0822
7812	9340 125 00215	BSN20
7813	9340 125 00215	BSN20
7814	3198 010 42310	BC847BW
7816	3198 010 42310	BC847BW
7817	9322 245 55671	SII9025CTU
7818	9352 759 98118	PCA9515ADP
7824	9340 125 00215	BSN20
7825	9340 125 00215	BSN20
7850		For SW see item 0821
7851	9340 125 00215	BSN20
7852	9340 125 00215	BSN20
7860	3198 010 42310	BC847BW
7861	3198 010 42310	BC847BW
7901	9322 183 05668	TS482ID
7902	3198 010 42320	BC857BW
7911	3198 010 42310	BC847BW
7912	3198 010 42310	BC847BW
7915	3198 010 42310	BC847BW
7916	3198 010 42310	BC847BW
7917	3198 010 42320	BC857BW
7919	3198 010 42310	BC847BW
7922	3198 010 42310	BC847BW
7A01	9352 796 42118	TDA8932T/N1
7A05	3198 010 42320	BC857BW
7A06	3198 010 42310	BC847BW
7A07	3198 010 42310	BC847BW
7B01	9322 202 34668	L5973D
7B02	9322 119 88668	LD1117DT33C
7B03	9340 034 70215	2N7002
7B04	9322 175 62685	Cable 09P/220/09P
7B05	9322 212 14668	SI4423DY
7M01	9322 206 24668	M24C02-WMN6P
7M04	3198 010 42030	BC847B
7M05	3198 010 42320	BC857BW

Side I/O Panel [D]

Various

1301	2422 026 05133	Connector SVHS 4p f
1302	2422 026 05807	Soc. Cinch 3p f YeWhRd

1303	2422 026 04747	Socket phone 1p f
1304	2422 025 10655	Connector 11p m

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2301	3198 016 34790	47pF 10% 50V 0603
2302	2238 867 15479	47pF 5% 50V 0603
2302	3198 016 34790	47pF 10% 50V 0603
2303	3198 016 32290	22pF 10% 50V 0603
2304	2238 867 15479	47pF 5% 50V 0603
2304	3198 016 34790	47pF 10% 50V 0603
2305	3198 016 31020	1nF 25V 0603
2306	3198 016 31020	1nF 25V 0603
2307	3198 017 32230	22nF 20% 25V 0603
2308	3198 017 32230	22nF 20% 25V 0603
2309	3198 017 31030	10nF 20% 50V 0603
2310	3198 017 31030	10nF 20% 50V 0603
2311	3198 016 36890	68pF 50V 0603
2313	3198 016 31020	1nF 25V 0603
2314	3198 016 31020	1nF 25V 0603

⊣WW⊢

3301	3198 021 37590	75Ω 5% 0603
3302	3198 021 37590	75Ω 5% 0603
3303	3198 021 31090	10Ω 5% 0.062W 0603
3304	2322 702 60101	100 Ohm 5% 0603
3304	3198 021 31010	100Ω 5% 0.062W 0603
3305	3198 021 31090	10Ω 5% 0.062W 0603
3306	2322 702 60101	100 Ohm 5% 0603
3306	3198 021 31010	100Ω 5% 0.062W 0603
3308	3198 021 31510	150Ω 5% 0.062W 0603
3309	3198 021 33330	33kΩ 5% 0.062W 0603
3310	3198 021 31510	150Ω 5% 0.062W 0603
3311	3198 021 33330	33kΩ 5% 0.062W 0603
3312	2322 702 60103	10k Ohm 5% 0603
3312	3198 021 31030	10kΩ 5% 0.062W 0603
3313	2322 702 60103	10k Ohm 5% 0603
3313	3198 021 31030	10kΩ 5% 0.062W 0603
4308	2422 549 42896	Bead 120Ω 100MHz
4308	3198 018 90030	120Ω 100MHz 0603
4309	3198 018 90030	120Ω 100MHz 0603

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6301	9322 202 10685	DF3A6.8FUG
6302	9322 202 10685	DF3A6.8FUG
6303	9322 202 10685	DF3A6.8FUG
6304	9322 202 10685	DF3A6.8FUG
6305	9322 202 10685	DF3A6.8FUG
6306	9322 202 10685	DF3A6.8FUG
6307	9322 202 10685	DF3A6.8FUG

Keyboard & Control Panel [E]

Various

1012	4822 276 13775	Switch 1p 0.1A 12V
1013	4822 276 13775	Switch 1p 0.1A 12V
1016	4822 276 13775	Switch 1p 0.1A 12V
1M01	2422 025 10775	Connector 3p m

⊣⊢

2001	4822 126 13881	470pF 5% 50V

⊣WW⊢

3010	4822 051 30391	390Ω 5% 0.062W
3011	4822 051 30561	560Ω 5% 0.062W
3012	3198 021 31820	1.8kΩ 5% 0.062W 0603
3013	4822 051 30151	150Ω 5% 0.062W
3014	4822 117 12968	820Ω 5% 0.62W
3015	4822 051 30008	Jumper 0603
3016	4822 051 30008	Jumper 0603
3017	4822 051 30008	Jumper 0603
4001	4822 051 30008	Jumper 0603

⊣▷⊢

6011	4822 130 11564	UDZ3.9B
6012	4822 130 11564	UDZ3.9B
6014	3198 020 55680	BZX384-C5V6
6015	3198 020 55680	BZX384-C5V6
6016	3198 020 55680	BZX384-C5V6
6017	3198 020 55680	BZX384-C5V6
6018	3198 020 55680	BZX384-C5V6

IR & LED Panel [J]

Various

1M01	2422 025 10775	Connector 3p m
1M20	2422 025 10776	Connector7p m

⊣⊢

2001	3198 027 02290	Jumper 0603
2801	2020 552 00134	22µF 20% 6.3V 0805

⊣WW⊢

3010	3198 021 33310	330Ω 5% 0.062W 0603
3011	3198 021 36820	6.8kΩ 5% 0.062W 0603
3012	3198 021 31230	12kΩ 5% 0.062W 0603
3013	3198 021 38210	820Ω 5% 0.062W 0603
3014	3198 021 31030	10kΩ 5% 0.062W 0603
3019	3198 021 31510	150Ω 5% 0.062W 0603
3020	3198 021 31510	150Ω 5% 0.062W 0603
4001	3198 021 90030	Jumper 0603
4002	3198 021 90030	Jumper 0603
4004	3198 021 90030	Jumper 0603
4005	3198 021 90030	Jumper 0603
4010	3198 021 90030	Jumper 0603
4012	3198 021 90030	Jumper 0603
4015	3198 021 90030	Jumper 0603
4017	3198 021 90030	Jumper 0603
4019	3198 021 90030	Jumper 0603

⊣▷⊢

6010	9322 243 77676	LED L-174A2PBC
6011	9322 244 07676	LED L-174A2IT-TNB5-19
6012	3198 020 54780	BZX384-C4V7

7010	9322 243 06671	IR Receiver
7011	3198 010 42030	BC847B
7012	3198 010 42030	BC847B

11. Revision List

Manual xxxx xxx xxxx.0

- First release.

Manual xxxx xxx xxxx.1

- **All Chapters:** 52” versions and 1080p module added
- **Chapter 1 and 4:** Mecanical data added for new types.
- **Chapter 5:** Option data for new types added.
- **Chapter 6:** Wiring diagrams added and I2C overview updated.
- **Chapter 8:** Option code table updated to provide all types.
- **Chapter 10:** Spare parts list updated with new model numbers.

Manual xxxx xxx xxxx.2

- **Chapter 8:** Tint settings 52" sets added.

Manual xxxx xxx xxxx.3

- **Chapter 6:** Supply lines overview replaced.